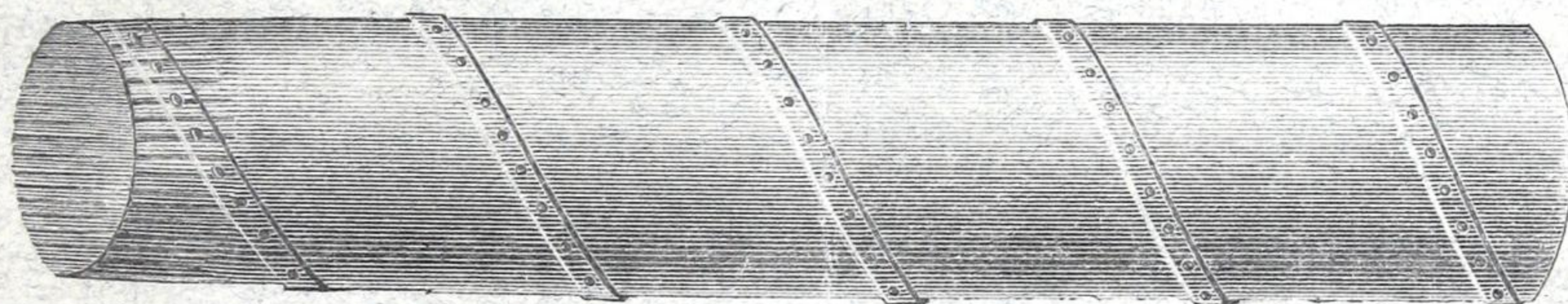


396-10

REVISED PRICE LIST.

ROOT'S

Spiral Riveted Seam Pipe



MERCHANT & CO.,

IMPORTERS OF

TIN PLATE, METALS, ETC.

MANUFACTURERS OF

Solder, Babbitt, Bolster, Stereotype Metals, Etc.

SHEET COPPER FOR AMALGAMATING PURPOSES.

Brass and Copper Seamless and Brazed Tubing.

525 Arch and 520 Cherry Streets, Philadelphia.

CLIFF & BEEKMAN STS., NEW YORK.

(C-1870)

PREFACE.

WE take pleasure in presenting our REVISED PRICE LIST to our patrons and the general public.

During the past few years we have made so many and such marked improvements in the manufacture of ROOT'S SPIRAL SEAM RIVETED PIPE, that we are fully warranted in offering it as the BEST ARTICLE of the kind for certain SPECIFIED USES.

We have such facilities for the production of PUNCHED AND FORMED SHEETS that the RAPIDITY, THOROUGHNESS and CHEAPNESS with which we can supply orders for the same are UNEQUALLED in this market.

We would invite attention to the SPECIAL ARTICLES we manufacture and sell as being the BEST of their respective kinds. We shall get out all orders with which we may be favored, promptly and satisfactorily, replying specifically and at length to all inquiries for goods, and by the employment of our best efforts to please, hope to merit a continuance of patronage.

ABENDROTH & ROOT MANUFACTURING Co.



J. F. PEARSON,
CATALOGUE PRINTER,
60 BARCLAY ST.,
NEW YORK.



ROOT'S PATENT Spiral Seam Riveted Pipe.

THE most valuable features of this pipe are its mechanical perfection and great strength in comparison with weight of material used.

The spiral seam is the strongest part of the pipe, as experiments when carried to bursting pressure have all shown the point of fracture to be in the centre of the strip of metal of which the pipe is formed, which proves that the full value of the tensile strength of the material used is insured by the peculiarity of the seam. We have demonstrated that spiral riveted seam sheet iron pipe is 50 per cent. stronger than that made with a straight or longitudinal seam.

This pipe is specially adapted for use (when galvanized) as Leader or Conductor Pipe, and Ventilating and Blower Pipe. When double galvanized (that is made of galvanized iron and re-galvanized after formation) and fitted with flanges, it is unequalled for use as Heating Pipe (using Exhaust Steam), Pump Column and Suction Pipe, Refrigerating Processes, and Air Compressor Pipe.

When made up with patent varnish in the seams and covered with a coating of coal tar and asphalt inside and out, applied at a temperature of 300 degrees F., and an additional covering of tarred felting applied to the outside, it is particularly adapted for water works use.

When used as distributing water mains, we make arrangements for connections and fittings by furnishing cast iron couplings and specials arranged for lead caulking.

When used for light service or hydraulic mining, connections and fittings suitable for the employment of cement in making joints are furnished.

The ease with which this pipe (no matter for what purpose designed or used) can be handled and transported, renders it remarkably convenient for use in localities difficult of access or where skilled labor is scarce.

We would recommend prospective purchasers to communicate with us, in all cases possible, as to results to be attained, purpose for which pipe is to be used, and surrounding conditions. The possession of a proper knowledge concerning its proposed use will enable us to recommend with certainty the kind and quality of spiral seam pipe best adapted to the special attendant conditions. We deem this precaution specially advisable in those instances where spiral seam pipe is intended for use as water mains.

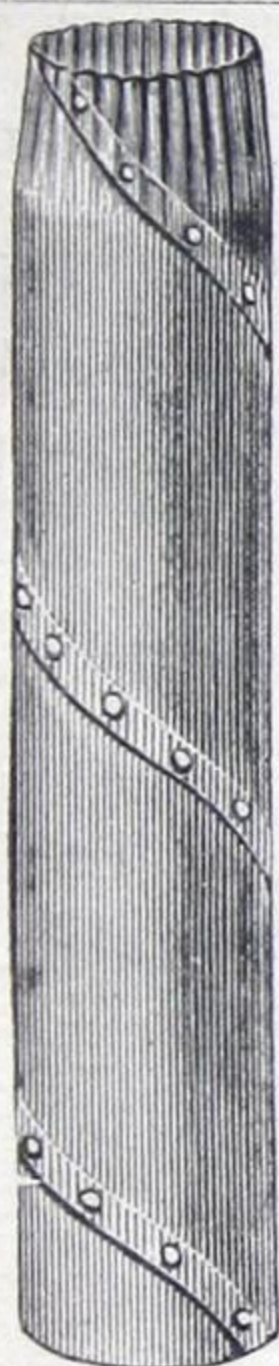
Work will be furnished according to drawings without extra charge. Prices are subject to change without special notice.

This price-list is designed to take the place of all previous lists and all orders received after it has been issued will be filled in accordance with prices herein contained.



LIGHT GALVANIZED RIVETED HOUSE LEADER, VENTILATING, AIR AND BLOWER PIPE, Etc.

PRICE PER LINEAL FOOT.



INSIDE DIAMETER.	GALVANIZED.	Manufactured in lengths of 10 feet and less. The heaviest, strongest and best Leader Pipe made.
2 inch.	\$.14	
2½ "	.17	
3 "	.19	
3½ "	.21	
4 "	.25	
5 "	.30	
6 "	.38	

No. 26, BIRMINGHAM WIRE GAUGE Spiral Seam Riveted Pipe, Thickness, .018 inch.

PRICE PER LINEAL FOOT, PLAIN OR CRIMPED END.

DIAMETER.	BLACK.	DIPPED IN COAL TAR AND ASPHALT.	GALVANIZED.
3 inch.	\$.17	\$.20	\$.25
4 "	.21	.25	.33
5 "	.25	.30	.40
6 "	.28	.34	.46

Manufactured in lengths of 10 feet and less.

No. 24, BIRMINGHAM WIRE GAUGE

Spiral Seam Riveted Pipe,

Thickness, .022 inch

PRICE PER LINEAL FOOT.

With Plain or Crimped Ends or Sheet Iron Sleeves for Slip Joint riveted on.

DIAMETER IN INCHES.	BLACK.	DIPPED IN COAL TAR AND ASPHALT.	GALVANIZED.	APPROXIMATE WEIGHT PER 100 FEET.
3	\$.20	\$.23	\$.30	100 lbs.
4	.25	.29	.38	130 "
5	.30	.35	.45	160 "
6	.33	.39	.50	185 "
7	.37	.44	.60	210 "
8	.42	.50	.65	240 "
9	.48	.57	.75	280 "
10	.54	.64	.85	300 "
11	.60	.71	.90	330 "
12	.68	.80	1.05	400 "

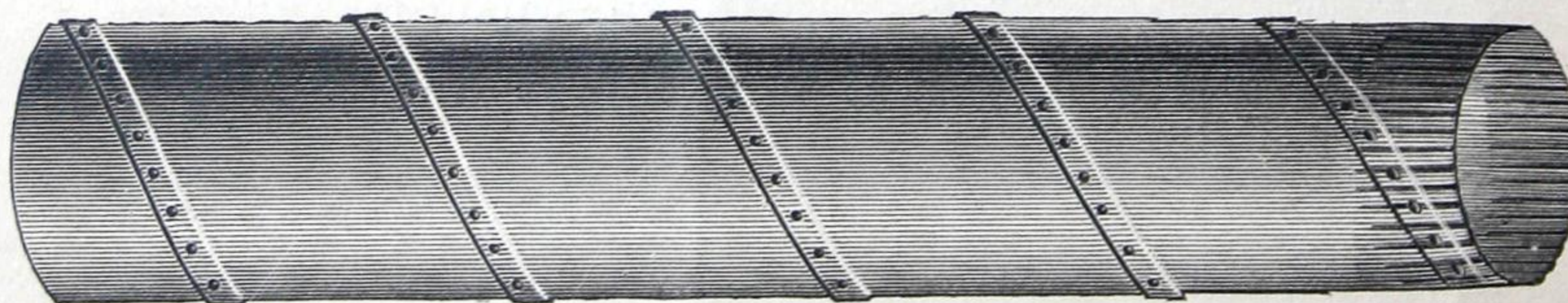
In lengths of 10 feet and less. Each length tested to service required.

For Price of lugs for wiring, see page 12.

" " " flange-connections, see p. 15.

The above approximate weights are for black pipe only, and intended as guides for estimating freight charges; galvanized pipe, same gauge and diameter, is from 20 to 30 per centum heavier.

In ordering pipe, the margin of safety should be at least one-half or two-thirds of the bursting pressure.



Spiral Seam Pipe, crimped end.

No. 22, BIRMINGHAM WIRE GAUGE

Spiral Seam Riveted Pipe,

Thickness, .028 inch.

PRICE PER LINEAL FOOT.

With Plain or Crimped Ends or Sheet Iron Sleeves for Slip Joint riveted on.

DIAMETER IN INCHES.	BLACK.	DIPPED IN COAL TAR AND ASPHALT.	GALVANIZED.	APPROXIMATE WEIGHT PER 100 FEET.
3	0.24	\$0.27	\$0.32	130 lbs.
4	.30	.34	.43	160 "
5	.37	.42	.53	200 "
6	.40	.46	.60	240 "
7	.45	.52	.65	260 "
8	.53	.61	.75	300 "
9	.60	.69	.90	340 "
10	.65	.75	1.00	380 "
11	.70	.81	1.10	420 "
12	.82	.94	1.25	490 "
13	.90	1.03	1.35	530 "
14	1.00	1.14	1.45	575 "

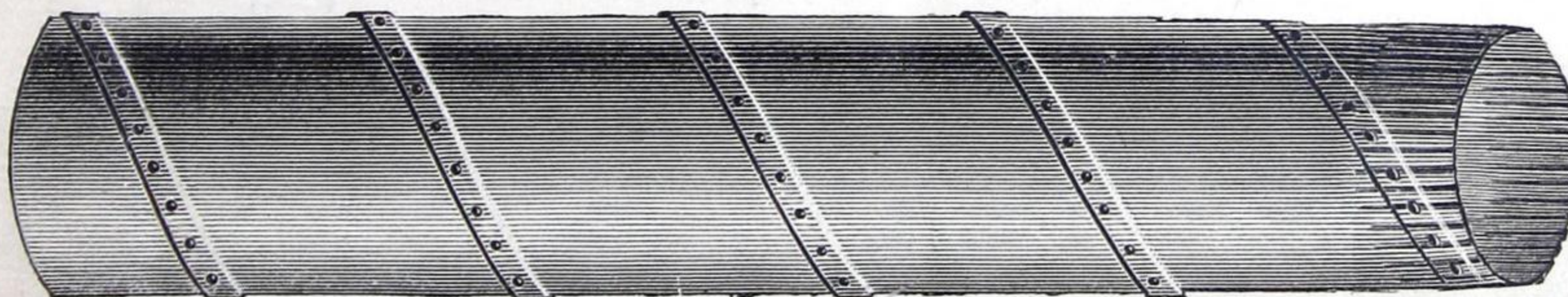
In lengths of 20 feet and less. Each length tested to service required.

For price of lugs for wiring, see page 12.

" " " flange connections, see p. 15.

The above approximate weights are for black pipe only, and intended as guides for estimating freight charges; galvanized pipe, same gauge and diameter, is from 20 to 30 per centum heavier.

In ordering pipe, the margin of safety should be at least one-half or two-thirds of the bursting pressure.



Spiral Seam Pipe, crimped end.

No. 20, BIRMINGHAM WIRE GAUGE Spiral Seam Riveted Pipe,

Thickness, .035 inch.

PRICE PER LINEAL FOOT.

With Plain or Crimped Ends or Sheet Iron Sleeves for Slip Joint riveted on.

DIAMETER IN INCHES.	BLACK.	DIPPED IN COAL TAR AND ASPHALT.	GALVANIZED.	WEIGHT PER 100 FEET.	APPROXIMATE BURSTING PRES. IN LBS. PER SQ. INCH
3	\$.27	\$.30	\$.38	150 lbs.	900 lbs.
4	.35	.39	.48	200 "	700 "
5	.40	.45	.60	250 "	550 "
6	.46	.52	.68	300 "	450 "
7	.51	.58	.75	325 "	400 "
8	.58	.66	.85	360 "	350 "
9	.66	.75	.97	410 "	325 "
10	.72	.82	1.05	500 "	275 "
11	.78	.89	1.20	550 "	250 "
12	.90	1.02	1.35	600 "	225 "
13	1.00	1.13	1.50	650 "	210 "
14	1.10	1.24	1.60	700 "	200 "
15	1.20	1.35	1.75	750 "	190 "
16	1.30	1.46	1.85	800 "	160 "
18	1.40	1.58	2.05	900 "	150 "
20	1.60	1.80	2.30	960 "	140 "
22	1.80	2.02	2.55	1,040 "	125 "
24	1.95	2.19	2.85	1,150 "	110 "

In lengths of 20 feet and less. Each length tested to service required.

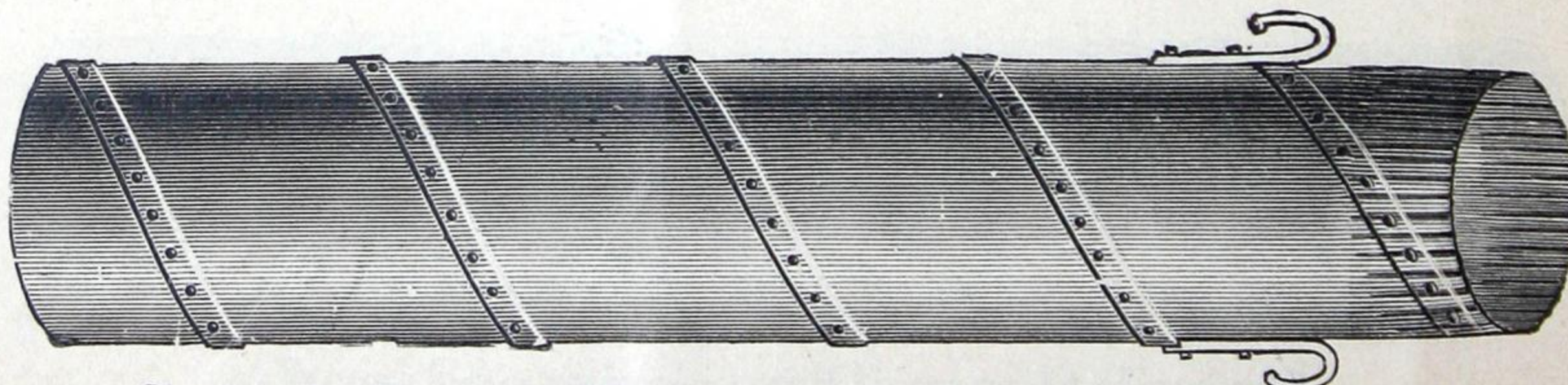
For Price of lugs for wiring, see page 12.

" " " flange connections, see p. 15.

For Price for covering pipe with tarred felting, and for reinforcing ends for city water works purposes, see page 17.

The above approximate weights are for black pipe only, and intended as guides for estimating freight charges; galvanized pipe, same gauge and diameter, is from 20 to 30 per centum heavier.

In ordering pipe, the margin of safety should be at least one-half or two-thirds of the bursting pressure.



Spiral Seam Pipe, with lugs for wiring.

No. 18, BIRMINGHAM WIRE GAUGE Spiral Seam Riveted Pipe,

Thickness, .049 inch.

PRICE PER LINEAL FOOT.

With Plain or Crimped Ends or Sheet Iron Sleeves for Slip Joint riveted on.

DIAMETER IN INCHES.	BLACK.	DIPPED IN COAL TAR AND ASPHALT.	GALVANIZED.	APPROXIMATE WEIGHT PER 100 FEET.	APPROXIMATE BURSTING PRES- SURE, POUNDS PER SQUARE INCH.
3	\$.34	\$.37	\$.46	185 lbs.	1300 lbs.
4	.42	.46	.58	245 "	1000 "
5	.50	.55	.70	300 "	800 "
6	.57	.63	.85	360 "	700 "
7	.63	.70	.90	400 "	600 "
8	.73	.81	1.05	460 "	500 "
9	.82	.91	1.18	525 "	450 "
10	.90	1.00	1.30	575 "	400 "
11	.95	1.06	1.40	625 "	360 "
12	1.15	1.27	1.65	750 "	330 "
13	1.25	1.38	1.80	800 "	300 "
14	1.35	1.49	1.95	900 "	280 "
15	1.50	1.65	2.10	950 "	260 "
16	1.60	1.76	2.25	1000 "	250 "
18	1.75	1.93	2.55	1125 "	220 "
20	2.00	2.20	2.90	1250 "	200 "
22	2.20	2.42	3.10	1350 "	180 "
24	2.40	2.64	3.35	1460 "	160 "

In lengths of 20 feet and less. Each length tested to service required.

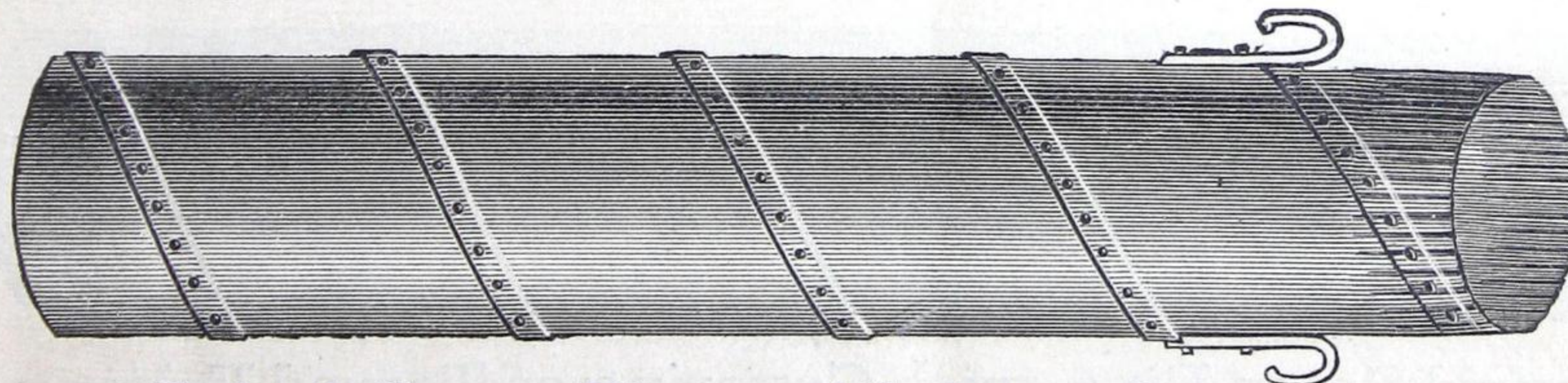
For Price of lugs for wiring, see page 12.

" " " flange connections, see p. 15.

For Price for covering pipe with tarred felting and for reinforcing ends, for city water works, etc., purposes, see page 17.

The above approximate weights are for black pipe only, and intended as guides for estimating freight charges; galvanized pipe, same gauge and diameter, is from 10 to 20 per centum heavier.

In ordering pipe, the margin of safety should be at least one-half or two-thirds of the bursting pressure.



Spiral Seam Pipe with lugs for wiring.

Double Galvanized Spiral Riveted Flanged PRESSURE PIPE.

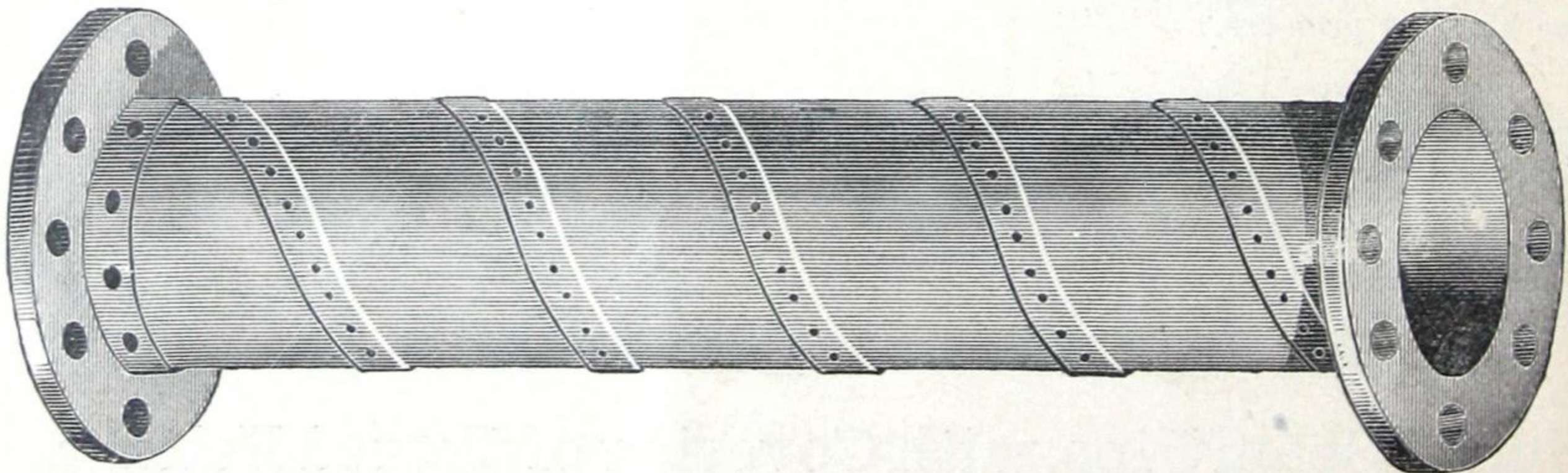
Made of galvanized iron and regalvanized after formation, thereby making all seams and laps perfectly solid.

Each length tested to 150 pounds Hydraulic Pressure, suitable for
**Exhaust Steam, Exhaust-steam Heating, Pump Suctions,
Pump Columns, Compressed Air, Refrigerating Pipe, &c.**

INSIDE DIAMETER IN INCHES.	PRICE PER LINEAL FOOT INCLUDING FLANGES.	THICKNESS BIRMINGHAM GAUGE.	NOMINAL WEIGHT PER FOOT.
3	\$0.50	No. 20	2½ lbs.
4	0.70	"	3 "
5	1.00	"	4 "
6	1.20	No. 18	5 "
7	1.40	"	6 "
8	1.70	"	7 "
9	2.00	"	8 "
10	2.60	No. 16	11 "
11	2.85	"	12 "
12	3.15	"	14 "
13	3.60	"	15 "
14	4.00	No. 14	20 "
15	4.40	"	22 "
16	5.15	"	24 "
18	6.40	"	29 "
20	7.95	"	34 "
22	....	....	....
24	....	....	....

In lengths of 20 feet, and less.

Pipe and Fittings gotten out to specifications and drawings without extra charge, except where lengths required are ALL 5 feet or less, in which case all lengths are charged as being 5 feet.



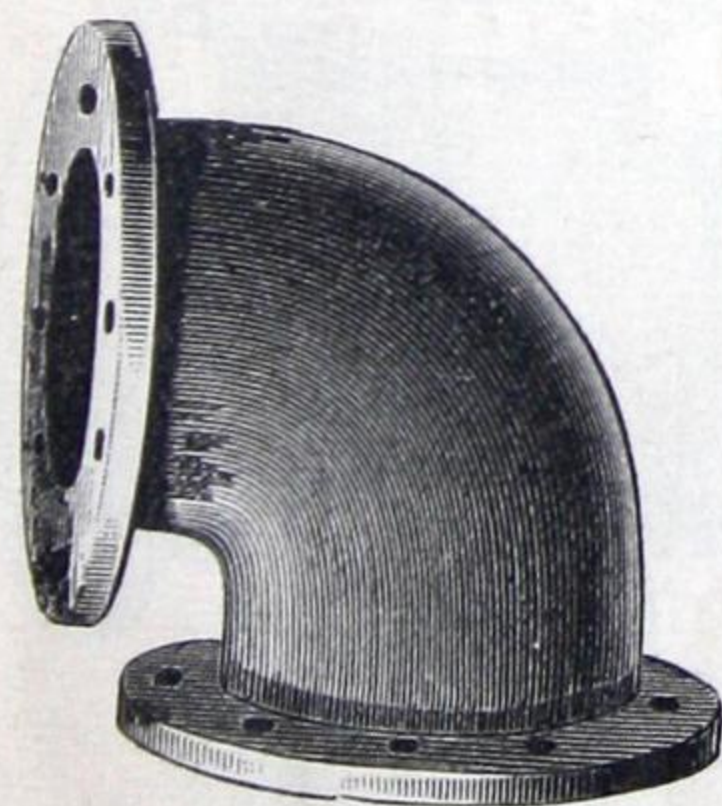
Galvanized Cast and Wrought Iron Fittings, FOR FLANGED SPIRAL PIPE.

INSIDE DIAMETER	ELBOWS.	TEES.	CROSSES.	REDUCERS	FLANGES.	DISKS OR BLIND FLANGES.	BOLTS AND NUTS.	COMPOSITION GASKETS.
3 in.	\$ 1.60	\$ 2.75	\$ 4.15	\$	\$.39	\$.45	\$.04	\$.09
4 "	2.10	3.25	5.30	* 3.00	.52	.65	.04	.10
5 "	2.85	4.40	6.70	* 3.50	.65	.78	.04	.12
6 "	4.10	5.70	8.00	* 4.75	.78	1.17	.04½	.16
7 "	5.10	7.30	11.00	* 5.50	1.04	1.56	.04½	.18
8 "	6.70	9.80	14.25	* 6.50	1.17	1.82	.04½	.23
9 "	9.00	13.80	18.80	* 8.00	1.56	2.34	.04½	.31
10 "	10.00	17.60	24.50	*10.25	1.82	2.47	.04½	.40
11 "	*13.00	*20.00	*26.50	*12.00	1.95	3.25	.04½	.45
12 "	15.80	22.50	30.00	*13.00	2.08	3.90	.04½	.50
13 "	19.15	*25.00	*33.50	*14.60	2.34	4.55	.04½	.56
14 "	*22.30	*30.50	*38.00	*16.50	2.60	5.46	.05	.63
15 "	26.00	*37.00	*45.00	*18.40	3.12	5.98	.05	.75
16 "	*30.00	*44.00	*53.00	*21.30	4.42	6.76	.05	.80
18 "	*34.00	*50.00	*59.00	*26.00	5.07	9.10	.05	1.08
20 "	*38.50	*56.00	*67.00	*29.40	5.59	11.70	.05	1.25
22 "	* . . . . .	* . . . . .	* . . . . .	* . . . . .	. . . . .	. . . . .	. . . . .	. . . . .
24 "	* . . . . .	* . . . . .	* . . . . .	* . . . . .	. . . . .	. . . . .	. . . . .	. . . . .

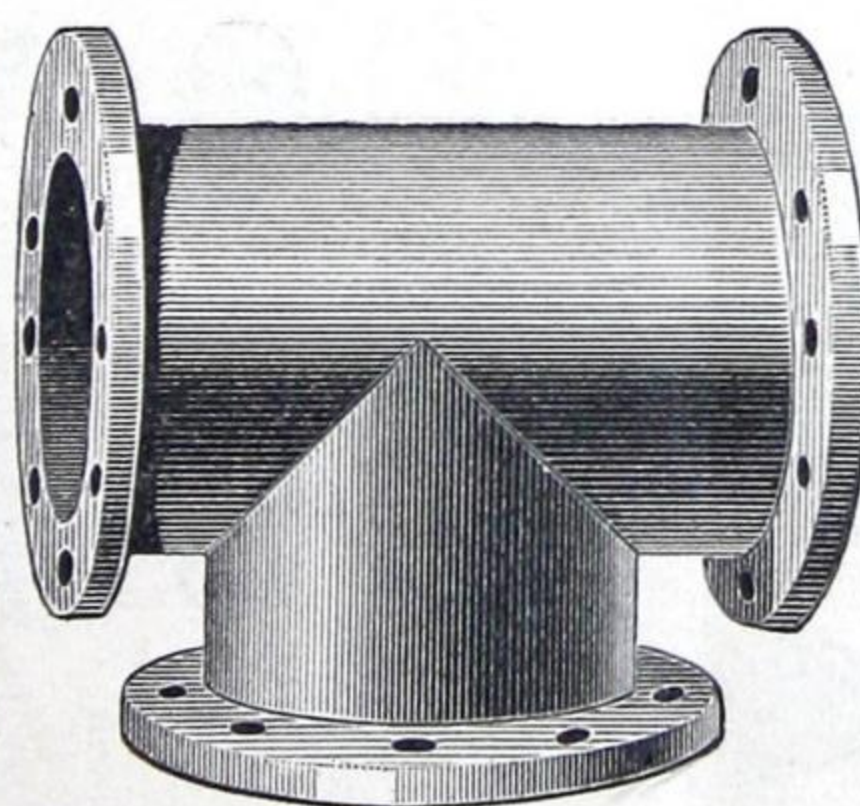
*All fittings marked thus are riveted sheet iron, all others are cast iron.

FITTINGS OF ANY DESIGN MADE TO ORDER.

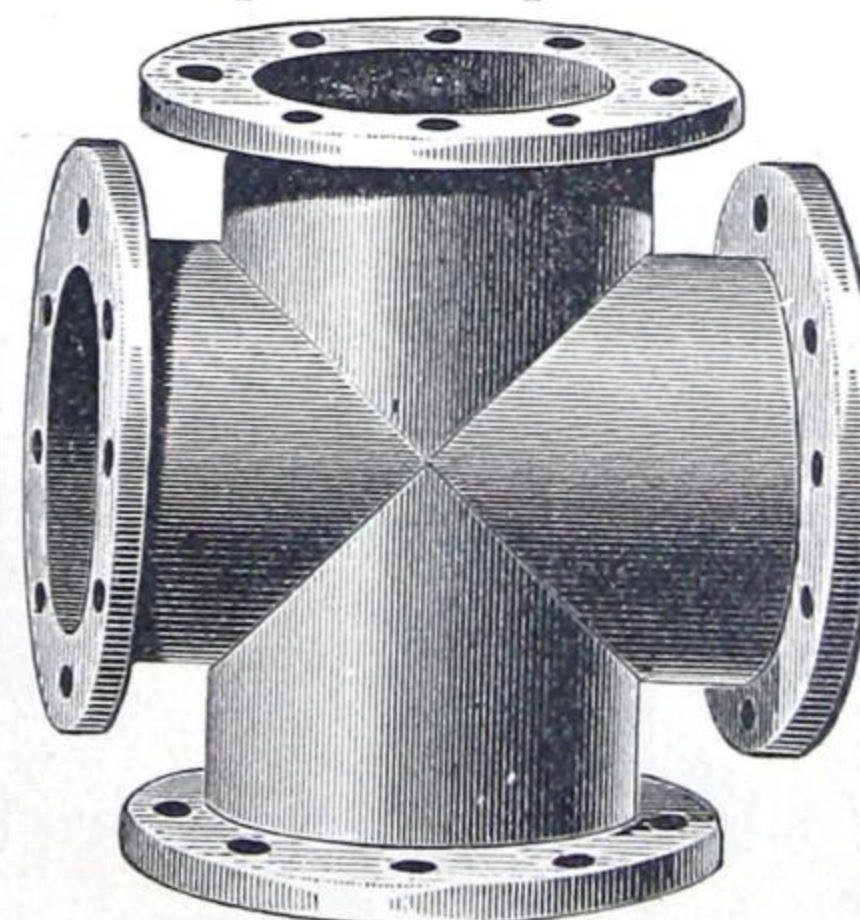
The Disks can be Tapped to Suit Wrought Iron Pipe if Required.



Cast Iron Flanged Elbow.



Cast Iron Flanged Tee.



Cast Iron Flanged Cross.

Black Cast and Wrought Iron Fittings

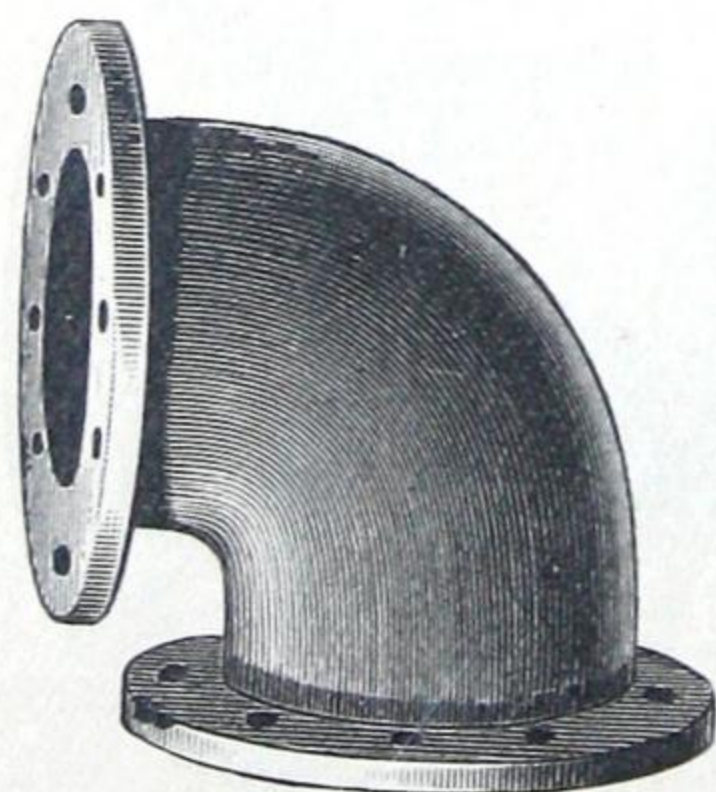
FOR FLANGED SPIRAL PIPE.

INSIDE DIAMETER.	ELBOWS.	TEES.	CROSSES.	REDUCERS.	FLANGES.	DISKS OR BLIND FLANGES.	BOLTS AND NUTS.	COMPOSITION GASKETS
3 inch.	\$ 1.25	\$ 1.95	\$ 3.00	\$	\$.24	\$.28	\$.02 $\frac{1}{2}$	\$.09
4 "	1.50	2.20	3.70	* 2.00	.32	.40	.02 $\frac{1}{2}$	.10
5 "	2.00	3.10	4.80	* 2.40	.40	.48	.02 $\frac{1}{2}$	.12
6 "	2.90	3.90	5.70	* 3.25	.48	.72	.03	.16
7 "	3.50	5.00	7.70	* 4.00	.64	.96	.03	.18
8 "	4.50	6.60	9.80	* 4.75	.72	1.12	.03	.23
9 "	6.20	9.25	13.00	* 5.50	.96	1.44	.03	.31
10 "	6.80	11.50	16.50	* 7.00	1.12	1.62	.03	.40
11 "	* 8.75	*14.00	*19.00	* 8.00	1.20	2.00	.03	.45
12 "	10.50	15.00	21.00	* 9.00	1.28	2.40	.03	.50
13 "	12.00	*16.50	*24.00	* 9.75	1.44	2.80	.03	.56
14 "	*13.50	*18.60	*27.00	*11.00	1.60	3.36	.03 $\frac{1}{2}$	.63
15 "	15.00	*22.00	*31.00	*12.25	1.92	3.68	.03 $\frac{1}{2}$	.75
16 "	*17.00	*25.00	*34.50	*14.20	2.72	4.16	.03 $\frac{1}{2}$	.90
18 "	*20.00	*29.00	*39.00	*17.40	3.12	5.60	.03 $\frac{1}{2}$	1.08
20 "	*23.00	*34.00	*45.00	*19.60	3.44	7.20	.03 $\frac{1}{2}$	1.25
22 "	* .....	* .....	* .....	* .....	....	....	....	....
24 "	* .....	* .....	* .....	* .....	....	....	....	....

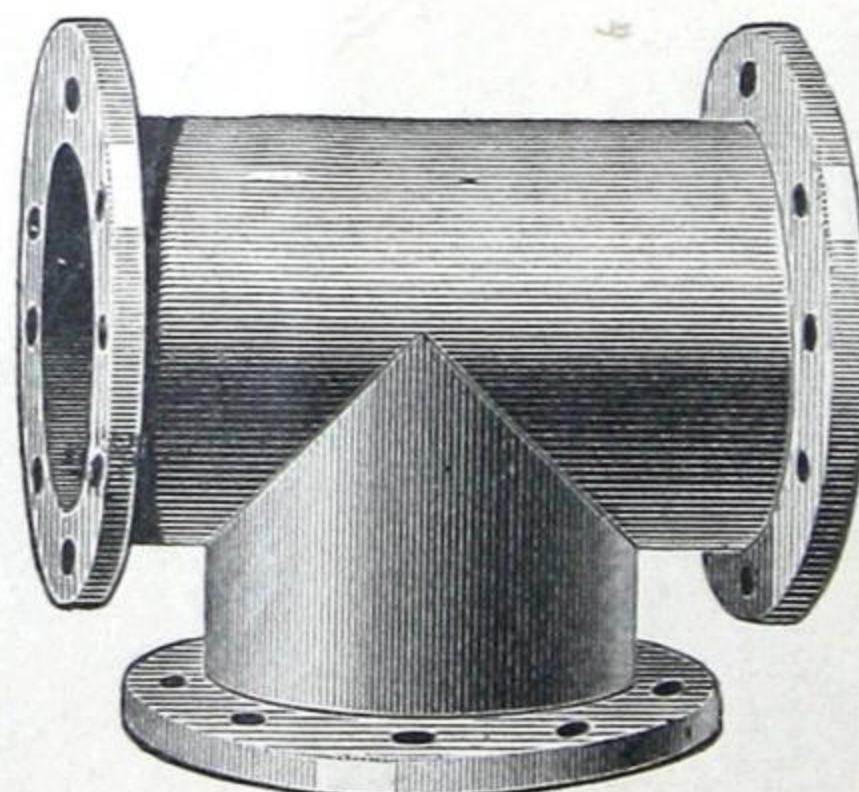
*All Fittings marked thus are riveted sheet iron, all others are cast iron.

FITTINGS OF ANY DESIGN MADE TO ORDER.

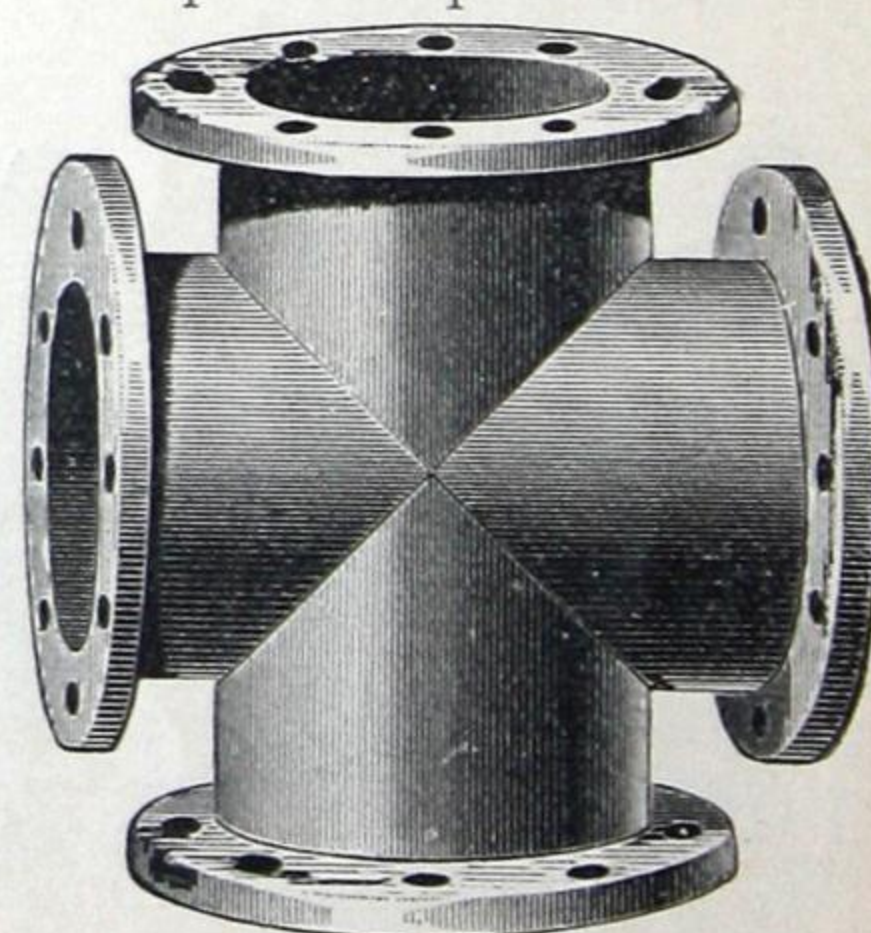
The Disks can be Tapped to Suit Wrought Iron Pipe if Required.



Cast Iron Flanged Elbow.



Cast Iron Flanged Tee.



Cast Iron Flanged Cross.

Table Nominal Weights and Dimensions

FOR SPIRAL PIPE FITTINGS.

Dimensions in Inches.

Inside Diam- eter.	Outside Diameter Flanges.	Number Bolt Holes.	Diameter Bolt Holes.	Diameter Circles on which Bolt Holes are Drilled.	Sizes of Bolts.	Space Filled from Face to Centre.		Length of Reducers
						Elbows	Tees and Crosses	
3 in.	6	4	1-2	4 3-4	7-16x1 3-4	3 5-8	3 5-8	.....
4 "	7	8	1-2	5 15-16	7-16x1 3-4	4 3-8	4 3-8	*23 in.
5 "	8	8	1-2	6 15 16	7-16x1 3-4	5 1-4	5 1-4	*23 "
6 "	8 7-8	8	5-8	7 7-8	1-2 x1 3-4	6 1-4	6 1-4	*23 "
7 "	10	8	5-8	9	1-2 x1 3-4	7 1-4	7 1-4	*22 "
8 "	11	8	5-8	10	1-2 x2	8 3-8	8 1-8	*22 "
9 "	13	8	5-8	11 1-4	1-2 x2	9 1-8	9 1-4	*22 "
10 "	14	8	5-8	12 1-4	1-2 x2	10 1-4	10 1-4	*33 "
11 "	15	12	5-8	13 3-8	1-2 x2	*11	*11	*33 "
12 "	16	12	5-8	14 1-4	1-2 x2	12 1-4	12 1-4	*33 "
13 "	17	12	5-8	15 1-4	1-2 x2	13	*13	*33 "
14 "	17 7-8	12	5-8	16 1-4	1-2 x2 1-2	*14	*14	*32 "
15 "	19	12	5-8	17 7-16	1-2 x2 1-2	15	*15	*32 "
16 "	21 3-16	12	5-8	19 1-4	1-2 x2 1-2	*16	*16	*32 "
18 "	23 1-4	16	11-16	21 1-4	1-2 x2 1-2	*18	*18	*32 "
20 "	25 1-8	16	11-16	23 1-8	1-2 x2 1-2	*20	*20	*32 "

Weights in Pounds.

Inside Diameter.	Elbows.	Tees.	Crosses.	Reducers.	Flanges.	Disks.	Gaskets.
3 in.	8	16	25	.....	3	3 1-2	1-7
4 "	12	20	33	* 11	4	5	1-6
5 "	17	28	38	* 14	5	6	1-5
6 "	26	36	47	* 20	6	9	1-4
7 "	31	45	62	* 24	8	12	1-3
8 "	44	65	90	* 28	9	14	1-2
9 "	58	92	117	* 35	12	18	3-4
10 "	66	120	138	* 45	14	19	7-8
11 "	* 55	* 75	*110	* 52	15	25	1
12 "	108	144	216	* 57	16	30	1 1-8
13 "	135	*100	*130	* 63	18	35	1 1-4
14 "	* 80	*122	*160	* 75	20	42	1 3-8
15 "	150	*140	*190	* 84	24	46	1 1-2
16 "	*105	*158	*210	* 99	34	52	1 5-8
18 "	*125	*188	*250	*123	39	70	1 3-4
20 "	*150	*225	*300	*138	43	90	2

*All Fittings marked thus are riveted sheet iron ; all others are cast iron.

Fittings of any Design made to Order.

STRAIGHT SEAM

Riveted Pipe and Fittings

MANUFACTURED OF
HEAVY GAUGES
OF

Black and Galvanized Sheet Iron,

SUITABLE FOR

Water, Blower, Air, Ventilator Pipe, and Smoke Stacks, &c.

PIPE.—Galvanized.

Price per pound.

No. 12 to 14, W. G.....	11 cts.
No. 15 to 17, W. G.....	12 “
No. 18 to 20, W. G.....	14 “
No. 21 to 24, W. G.....	16 “

Black.

No. 12 to 14, W. G.....	8 cts.
No. 15 to 17, W. G.....	9 “
No. 18 to 20, W. G.....	10 “
No. 21 to 24, W. G.....	11 “

FITTINGS, ELBOWS, TEES, CROSSES, &c.—Galvanized.

No. 12 to 14, W. G.....	20 cts.
No. 15 to 17, W. G.....	21 “
No. 18 to 20, W. G.....	24 “
No. 21 to 24, W. G.....	30 “

Black.

No. 12 to 14, W. G.....	17 cts.
No. 15 to 17, W. G.....	18 “
No. 18 to 20, W. G.....	20 “
No. 21 to 24, W. G.....	25 “

Wrought Iron Lugs for Slip Joint.

Black.....	12 cents each
Galvanized.....	15 “ “

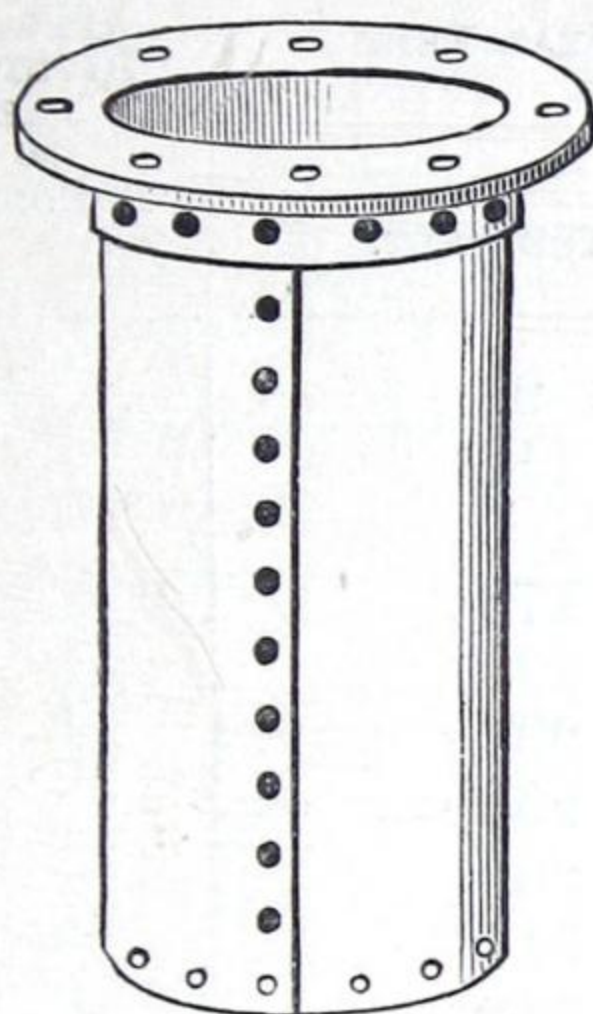
Fittings coated with Coal Tar and Asphalt at 300° Temperature, extra.

No. 16, W. G., and Heavier.....	extra net, 1 cent lb.
No. 17, W. G., and Lighter	“ “ 1½ “ “

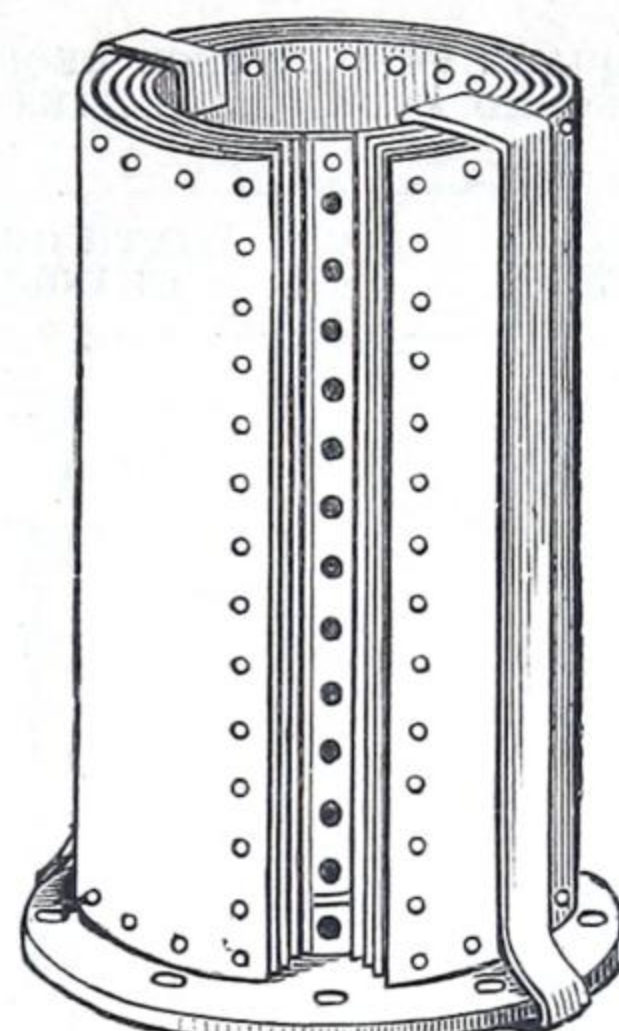
Pipe ½ cent for each inch of diameter per lineal foot.

Pipe and Fittings gotten out to drawings, and specifications and estimates furnished.

Punched and Rolled Sheets.



Single Section.



Packed for Shipment.

Galvanized Punched and Formed Sheets.

No. 10 to 14 W. G.....	10 cts. per lb.
No. 15 to 17 W. G.....	11 " "
No. 18 to 20 W. G.....	12 " "
No. 20 to 24 W. G.....	13 " "

Black Punched and Formed Sheets.

No. 10 to 14 W. G.....	7 cts. per lb.
No. 15 to 17 W. G.....	7½ " "
No. 18 to 20 W. G.....	8 " "
No. 21 to 24 W. G.....	8½ " "

Wrought Iron Lugs for Slip Joints.

Black.....	12 cts. each.
Galvanized.....	15 " "

Coated with Coal Tar and Asphalt at a temperature of 300°.

Punched and Formed Sheets.

½ cent for each inch of diameter per lineal foot, net.

Fittings,—Elbows, Tees, Crosses, Etc.

No. 16, and Heavier.....	1 cent per lb. net.
No. 18, and Lighter.....	1½ " " "

Pipe and Fittings gotten out to Drawings and Specifications,
and Estimates Furnished.

TABLE OF IRON AND RIVETS REQUIRED FOR PUNCHED AND FORMED SHEETS.

NUMBER SQUARE FEET OF IRON REQUIRED TO MAKE 100 LINEAL FEET PUNCHED AND FORMED SHEETS WHEN PUT TOGETHER.			APPROXIMATE NO. OF RIVETS 1 INCH APART REQUIRED FOR 100 LINEAL FEET PUNCHED AND FORMED SHEETS.
DIAMETER IN INCHES.	WIDTH OF LAP, IN INCHES.	SQUARE FEET.	
3	1	90	1,600
4	1	116	1,700
5	1½	150	1,800
6	1½	178	1,900
7	1½	206	2,000
8	1½	234	2,200
9	1½	258	2,300
10	1½	289	2,400
11	1½	314	2,500
12	1½	343	2,600
13	1½	369	2,700
14	1½	397	2,800
15	1½	423	2,900
16	1½	452	3,000
18	1½	506	3,200
20	1½	562	3,500
22	1½	617	3,700
24	1½	670	3,900
26	1½	725	4,100
28	1½	779	4,400
30	1½	836	4,600
36	1½	998	5,200

WEIGHT OF ONE SQUARE FOOT OF SHEET IRON.

THICKNESS BY THE BIRMINGHAM WIRE GAUGE.

NO. OF GAUGE.	THICKNESS IN DECIMALS OF AN INCH.	WEIGHT IN POUNDS, BLACK.	WEIGHT IN POUNDS, GALVANIZED.
26	.018	.72	.94
24	.022	.88	1.13
22	.028	1.12	1.38
20	.035	1.40	1.69
18	.049	1.97	2.19
16	.065	2.61	2.82
14	.083	3.33	3.52
12	.109	4.37	4.50
10	.134	5.38	....

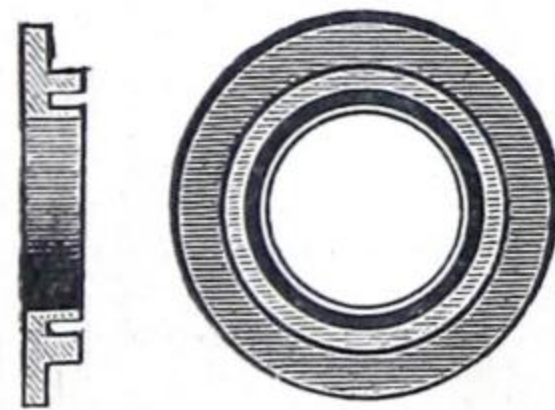
ORDINARY FLANGES,

AND ATTACHING SAME TO

Black or Galvanized Pipe or Fittings.

DIAMETER IN INCHES.	PRICE BLACK—FOR 1 FLANGE.	PRICE GALVANIZED—FOR 1 FLANGE.
3	\$.30	\$.45
4	.40	.60
5	.50	.75
6	.60	.90
7	.80	1.20
8	.90	1.35
9	1.20	1.80
10	1.40	2.10
11	1.50	2.25
12	1.60	2.40
13	1.80	2.70
14	2.00	3.00
15	2.40	3.60
16	3.40	5.10
18	3.90	5.75
20	4.30	6.45

Loose Flanges for Caulking on Pipe.



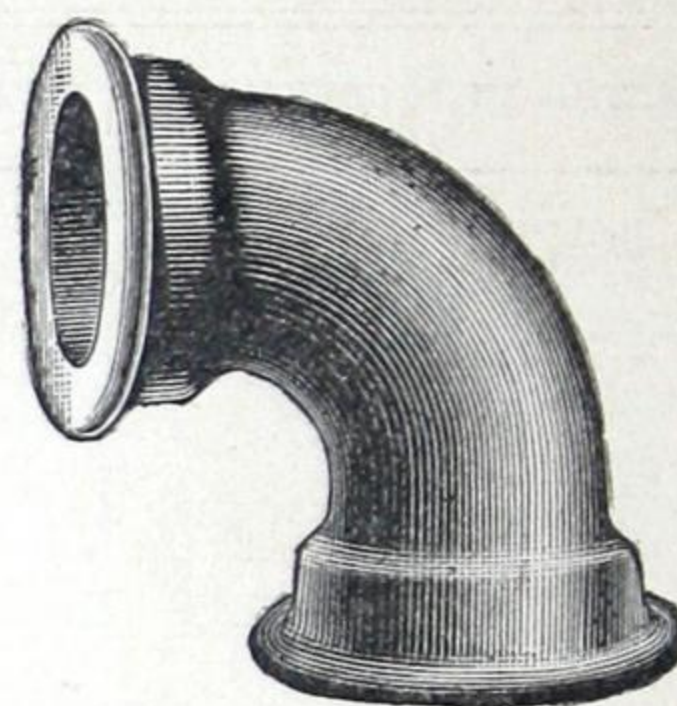
DIAMETER.	APPROXIMATE WEIGHT.	EACH.	DIAMETER.	APPROXIMATE WEIGHT.	EACH.
3	lbs. 7.20	\$.50	11	lbs. 36.00	\$2.50
4	" 9.60	.65	12	" 38.40	2.70
5	" 12.00	.85	13	" 43.20	3.00
6	" 14.40	1.00	14	" 48.00	3.40
7	" 19.20	1.35	15	" 57.60	4.00
8	" 20.40	1.50	16	" 81.60	5.60
9	" 28.80	2.00	18	" 94.00	6.50
10	" 33.60	2.35	20	" 103.20	7.20

CAST IRON FITTINGS,

FOR LEAD CAULKING.



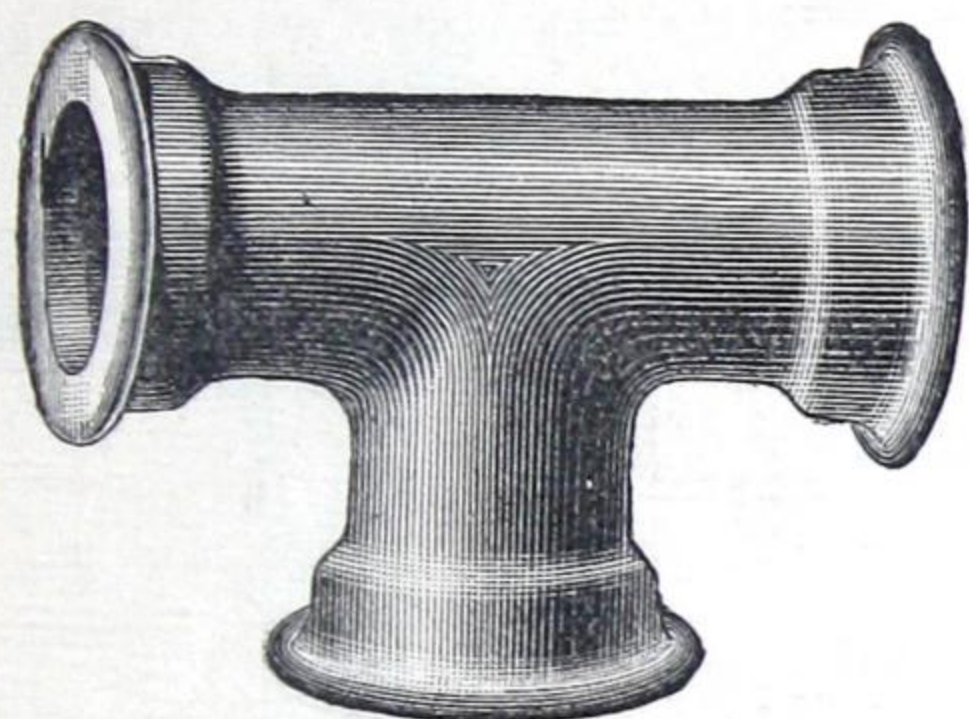
Cast Iron Coupling.



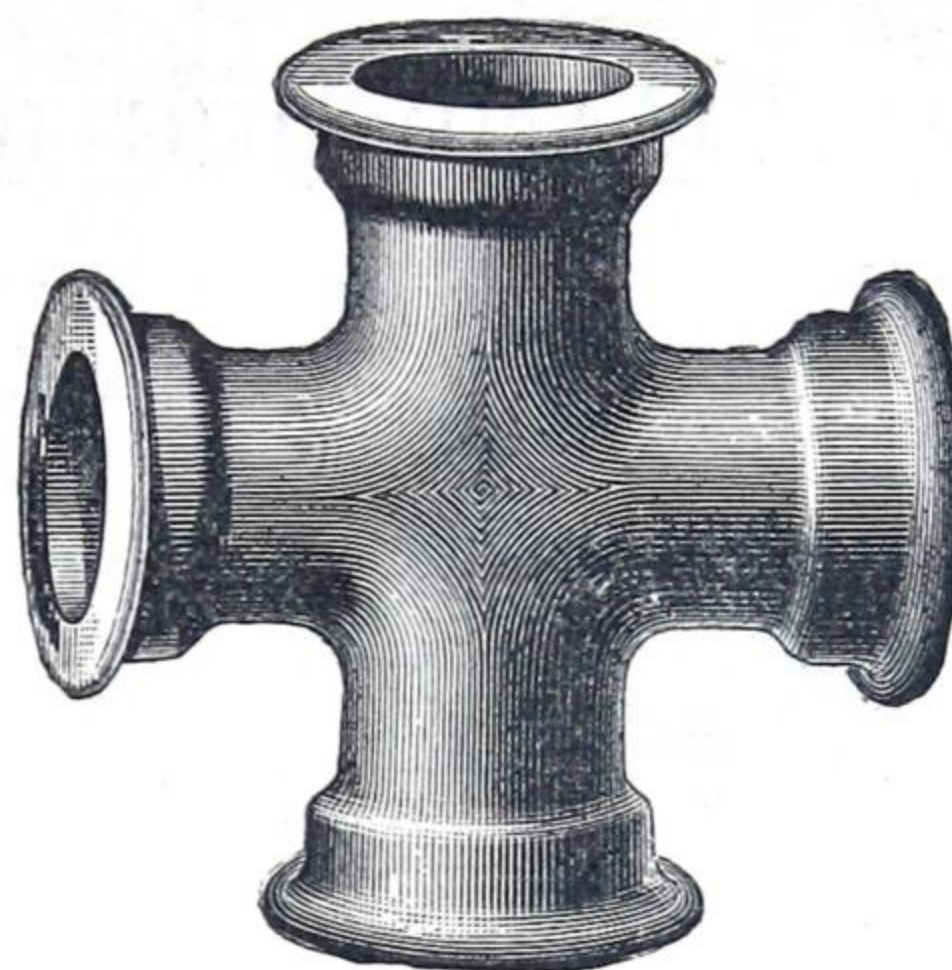
Cast Iron Elbow.

SIZE.	PRICE COUPLINGS.	PRICE ELBOWS.	PRICE TEES.	PRICE CROSSES.
3 inches.
4 "
5 "
6 "
7 "
8 "
9 "
10 "
11 "
12 "
13 "
14 "
15 "
16 "
18 "
20 "
22 "
24 "

CAST IRON FITTINGS, FOR LEAD CAULKING.



Cast Iron Tee.



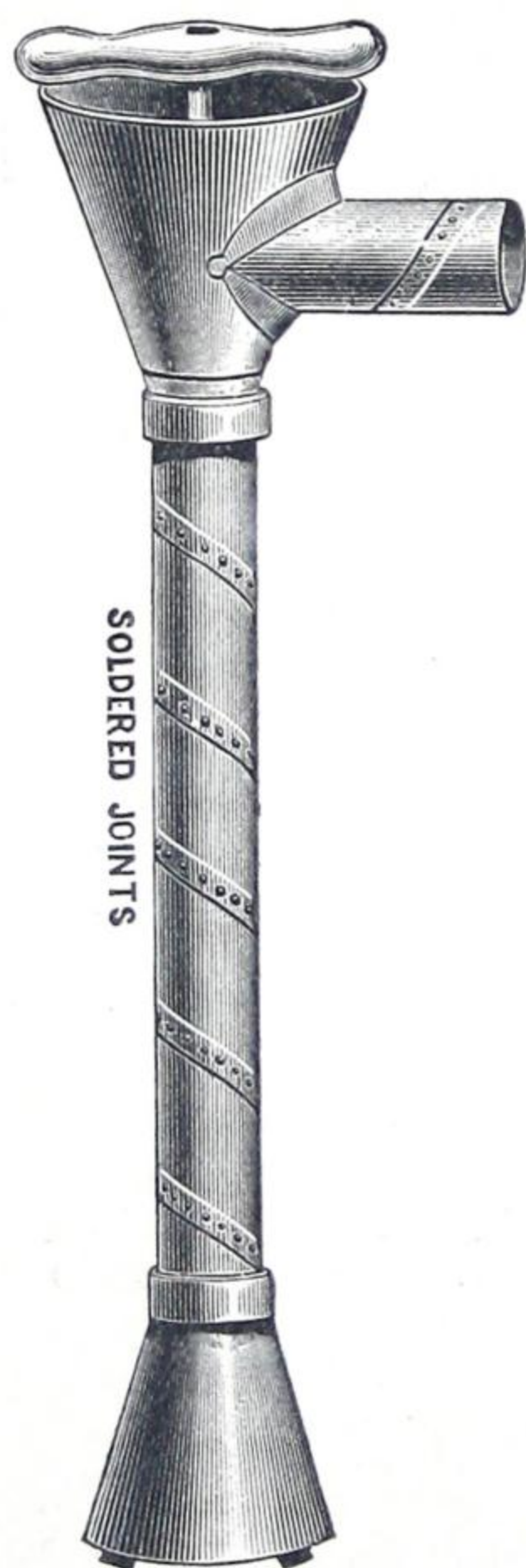
Cast Iron Cross.

Price per foot for covering Pipe with Tarred Felting and for reinforcing Ends,
especially adapted for City Water Works.

SIZE.	FELTING PER FOOT.	REINFORCING ENDS PER FOOT.
3 inches.
4 "
5 "
6 "
7 "
8 "
9 "
10 "
11 "
12 "
13 "
14 "
15 "
16 "
18 "
20 "
22 "
24 "

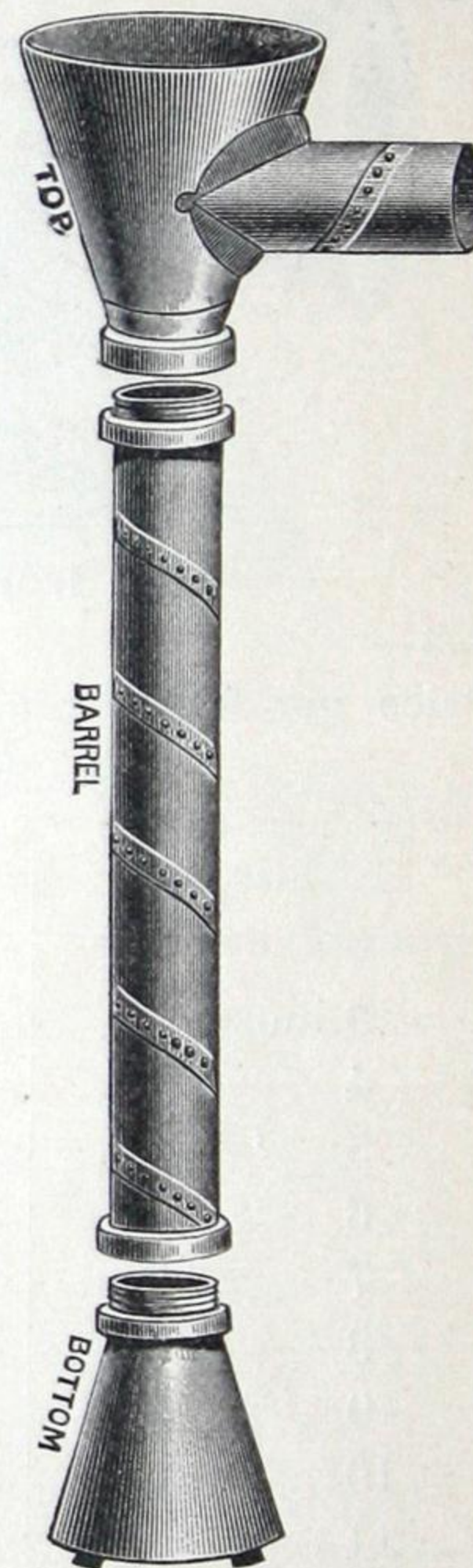
GALVANIZED WROUGHT IRON SPIRAL

HAND SUCTION OR BILGE PUMPS.



SOLDERED JOINTS.

INSIDE DIAMETER.	PRICE PER LINEAL FOOT SOLDERED JOINTS.
*1½ inches.	\$0.55
2 "	.60
2½ "	.65
3 "	.70
3½ "	.75
4 "	.80
*4½ "	.90
5 "	1.20



SCREW JOINTS
FOR SECTIONAL PUMPS.

For price of Screw Joint Pumps add *net* price of couplings required. Pumps shorter in length than five feet, charged as five feet.

Our Pumps combine great strength as compared with the ordinary hand-made article, and as the entire suction tube is constructed of but one piece of tube, without joints, its superiority over any other pump is apparent.

Pumps made to any special design without extra charge. Parties are cautioned against using the Spiral Leader for pump barrels, as all our pump stock is prepared expressly for pump purposes.

* Hand-made.

PARTS OF Hand or Bilge Pumps.

SIZE IN INCHES.	1½	2	2½	3	3½	4	4½	5	5½
Galvanized Iron Barrel, per foot.....	\$.12	\$.14	\$.17	\$.20	\$.22	\$.26	\$.30	\$.33	\$.38
Valves, Single Clapper, each.....	.21	.21	.25	.34	.42	.50	....	....	....
Valves, Double Clapper, each.....	....	....	....	....	....	....	.75	.90	1.05
Leather Plungers, each	.20	.20	.26	.30	.36	.42	.56	.66	....
Handles, each.....	.10	.10	.10	.10	.10	.10	.10	.10	....
Composition, Screw Couplings per pair...	....	.95	1.15	1.55	1.75	2.25	2.50	2.75	....

Rods for all sizes, per foot 2½ cents.



Valve, Single Clapper.

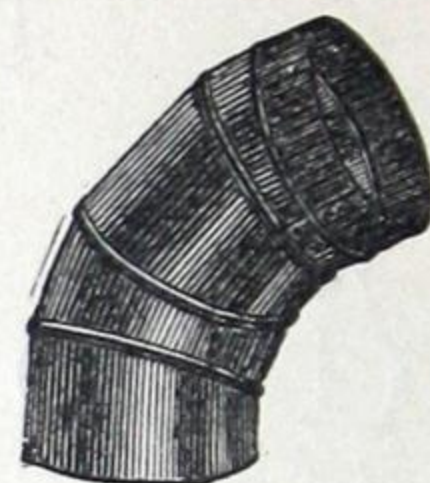


Leather Plunger.



Handle.

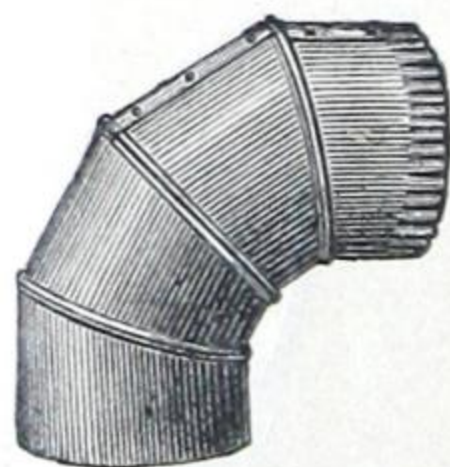
Patent Adjustable Elbows.



PRICE PER DOZEN.

SIZE.	CHARCOAL IRON.	PLANISHED OR AMERICAN RUSSIA.	GENUINE RUSSIA.	GALVANIZED IRON.	TIN.
1½ inch	\$ ...	\$....	....	\$2.00	\$1.50
2 "	....	....	....	2.00	1.50
2½ "	....	....	....	2.50	2.00
3 "	1.80	3.00	....	3.00	2.00
3½ "	2.00	3.50	....	3.50	3.00
4 "	2.20	4.00	5.00	4.00	3.00
4½ "	2.25	5.00	5.40	4.50	4.00
5 "	2.90	6.10	7.00	5.50	4.00
5½ "	3.35	7.10	8.40	6.50	5.50
6 "	3.35	7.10	8.75	7.00	5.50
7 "	4.20	8.75	10.00	8.50	7.00
8 "	....	....	....	11.50	9.00
9 "	....	....	....	12.50	10.50
10 "	....	....	....	14.00	12.00

Four Piece Stiff Elbows.



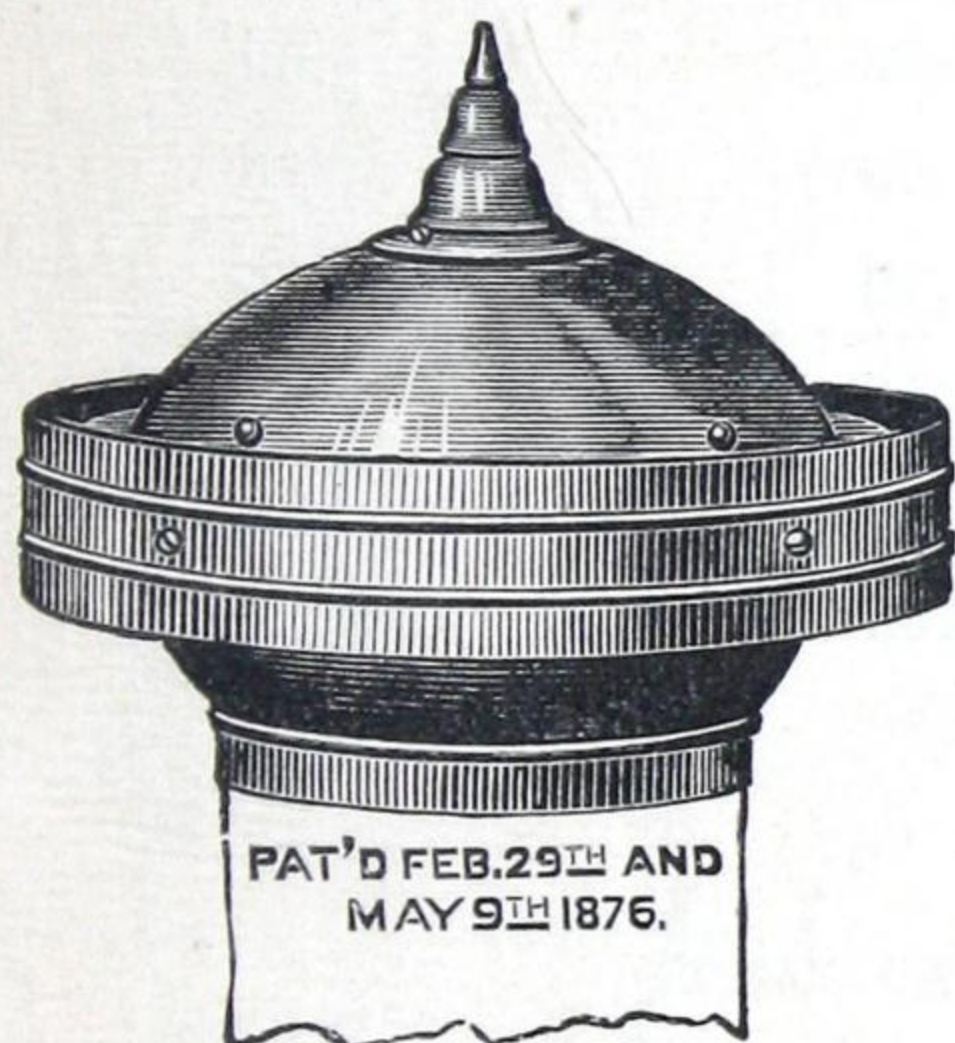
SIZE.	CHARCOAL.	GEN. RUSSIA.	GALVANIZED.
4 inch. ....per dozen.	\$1.65	\$3.00	\$3.50
4½ " " " " " "	1.85	3.75	3.75
5 " " " " " "	2.00	4.50	4.00
5½ " " " " " "	2.10	5.15	5.50
6 " " " " " "	2.30	5.55	6.00
7 " " " " " "	2.75	7.00	7.00
8 " " " " " "	4.50	....	9.00

VENTILATORS.

For Ventilation of Public and Private Buildings, Churches, etc.
and for use as Chimney Caps.

MANUFACTURED OF GALVANIZED SHEET IRON.

The "Globe" Ventilator.



THE GLOBE VENTILATOR.

If square or oblong base is required
it is charged Extra.

DIAMETER.	PRICE GALVANIZED.	DIAMETER.	PRICE GALVANIZED.
2 inch	\$1.00	10 inch	\$ 5.75
2½ "	1 00	12 "	6.75
2¾ "	1.00	14 "	13.00
3 "	1.50	16 "	20.00
3½ "	1.50	18 "	27.00
4 "	1.75	20 "	33.00
4½ "	2.00	24 "	40.00
5 "	2.50	30 "	65.00
5½ "	2.85	36 "	90.00
6 "	3.40	40 "	120.00
7 "	4.00	48 "	150.00
8 "	4.65	60 "	225.00


"Climax" Tubular Ventilators.



SIZE.	AREA.	PRICE.
2 inch	3 Sq. Inches.	\$ 1.00
4 "	12½ " "	1.75
6 "	28 " "	3.40
8 "	50 " "	4.65
10 "	78 " "	5.75
12 "	113 " "	6.75
16 "	201 " "	20.00

OTHER SIZES TO ORDER.

HOODS OR CAPS.

	SIZES FOR PIPE.	BLACK IRON.	GALVANIZED IRON.
		PRICE EACH.	PRICE EACH.
	2 inch	\$.23	\$.35
	3 "	.35	.46
	4 "	.46	.58
	5 "	.52	.69
	6 "	.69	.86
	7 "	.92	1.15
	8 "	1.15	1.49
	9 "	2.00	2.58
	10 "	2.30	2.86
	11 "	2.58	3.15
	12 "	2.86	3.45

LARGER SIZES SOLD BY WEIGHT.

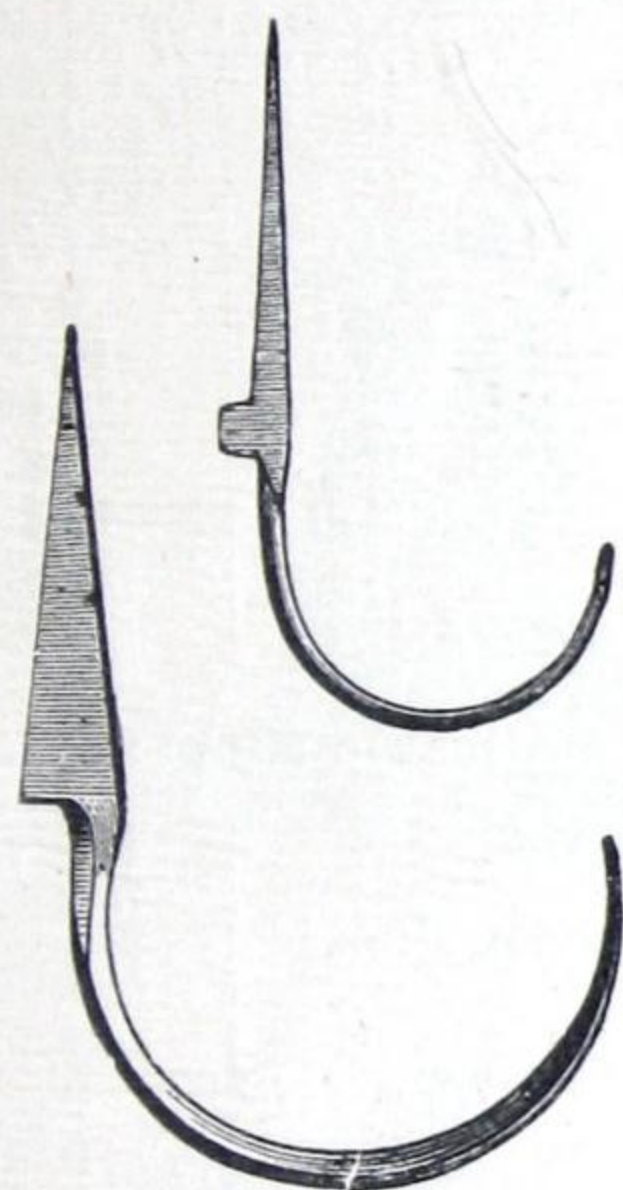
Galvanized Wire CONDUCTOR STRAINERS.



SIZE.	PRICE PER DOZEN.
2 inch	\$ 2.50
3 "	3.00
4 "	3.50
5 "	4.00
6 "	4.50
8 "	10.50
10 "	15.00
12 "	18.00

Sizes Larger than Six Inches, Made to Order Only.

Black and Galvanized LEADER HOOKS, WROUGHT IRON, FOR WOOD OR BRICK.



SIZE —INCHES.	PRICE EACH. GALVANIZED.	PRICE EACH. BLACK.
1½	\$.04	\$.03
2	.04½	.03½
2½	.05	.04
3	.06	.04½
3½	.07	.05½
4	.08	.06
5	.12	.09
6	.15	.11
7	.19	.16
8	.24	.18
9	.30	.23
10	.39	.30
11	.48	.37
12	.60	.45

LARGER HOOKS TO ORDER.

Wrought Iron GUTTER BRACES.

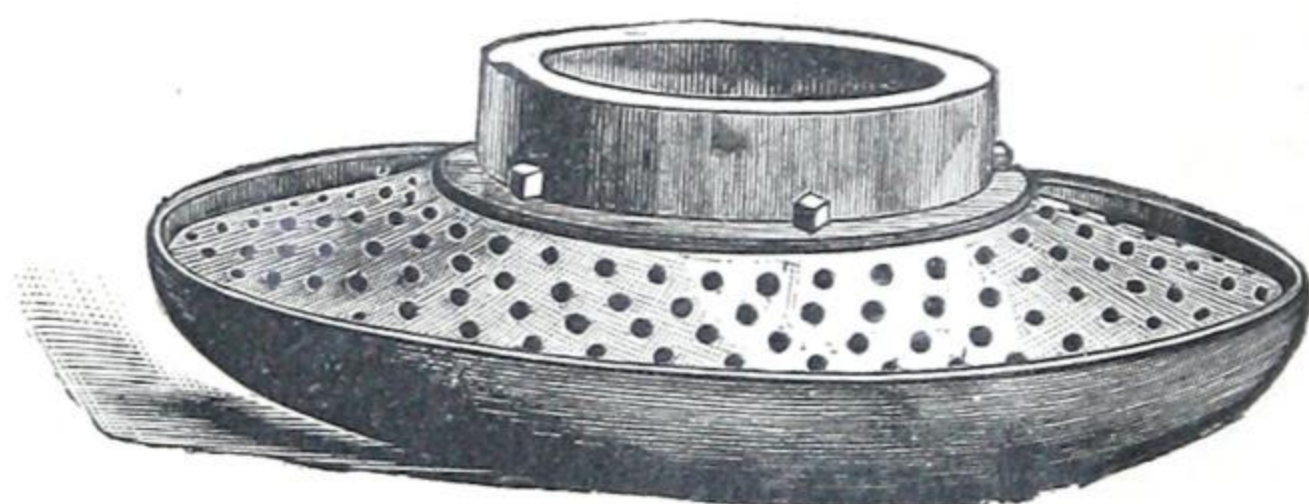


SIZE.	LENGTHS.	PRICE EACH.	
		GALVANIZED.	BLACK.
¼ x 1 inch.	15 inches.	\$.23	\$.17
“ “	18 “	.26	.20

Mushroom Strainers

FOR HAND AND STEAM PUMPS.

Manufactured of Black and Galvanized Malleable Iron and Galvanized Wrought Iron, with either Flange or Nipple Joints.

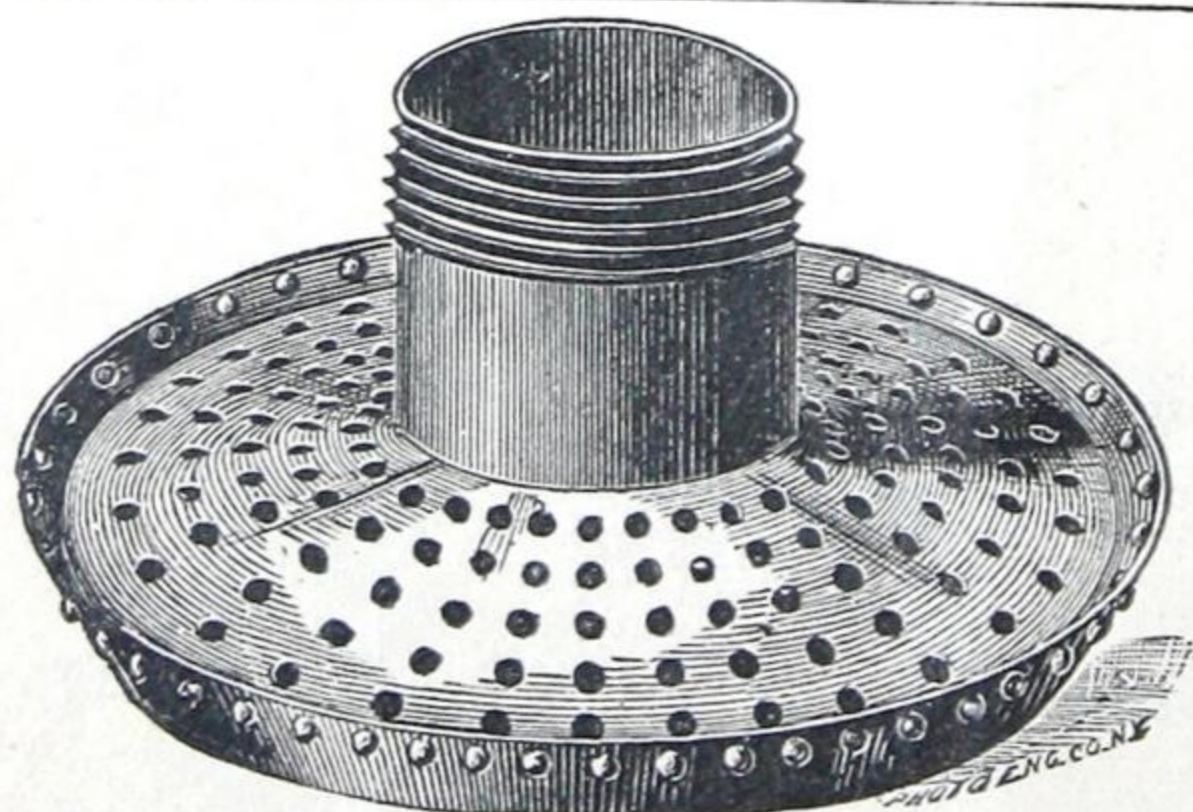


Black Malleable Nipple Joint.

DIAMETER.				PRICE.
1	Inch	Suction	Pipe.	\$.85
1 1/4	"	"	"	1.10
1 1/2	"	"	"	1.25
2	"	"	"	1.61
2 1/2	"	"	"	2.05
3	"	"	"	2.75
4	"	"	"	5.00
5	"	"	"	10.00
6	"	"	"	11.00
7	"	"	"	17.32
8	"	"	"	18.22
9	"	"	"	25.23
10	"	"	"	26.53

Galvanized Malleable Nipple Joint.

DIAMETER.				PRICE.
1	Inch	Suction	Pipe.	\$ 1.02
1 1/4	"	"	"	1.35
1 1/2	"	"	"	1.50
2	"	"	"	2.00
2 1/2	"	"	"	2.50
3	"	"	"	3.41
4	"	"	"	6.07
5	"	"	"	12.54
6	"	"	"	13.60
7	"	"	"	22.26
8	"	"	"	23.30
9	"	"	"	30.00
10	"	"	"	32.00



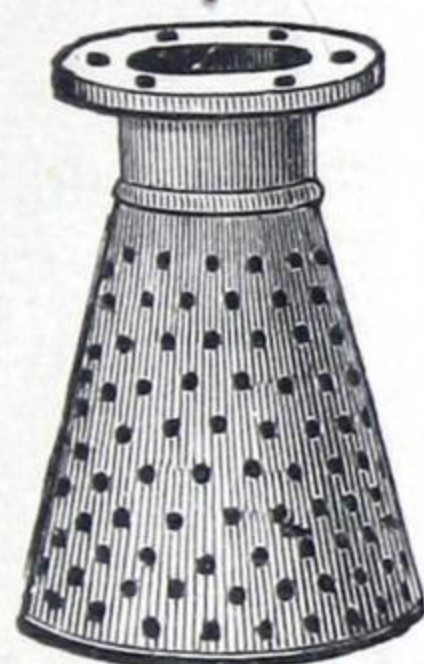
Galvanized Wrought Iron Nipple Joint.

DIAMETER.	PRICE.	DIAMETER.	PRICE.
4 inch	\$ 9.00	8 inch	\$21.00
5 "	10.50	9 "	27.00
6 "	12.50	10 "	37.00
7 "	18.00		

Galvanized Wrought Iron with Flange Joint, 10 per cent. advance on above list.
Larger Sizes Made to Order.

GALVANIZED WROUGHT IRON STRAINERS, FOR PUMP SUCTIONS

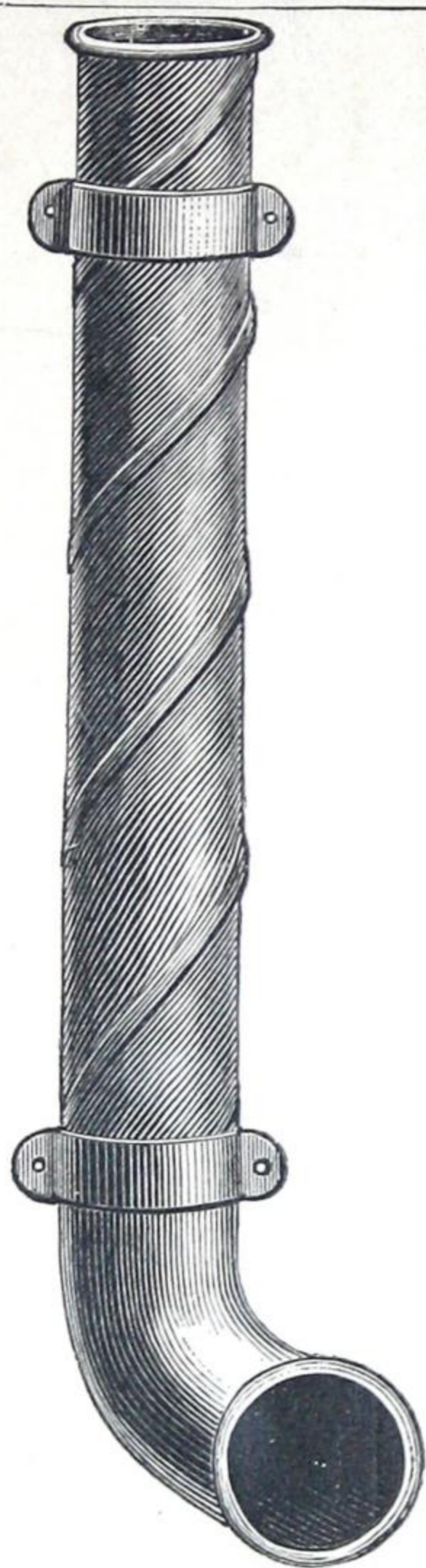
Fitted with Flange, Socket and Nipple Joints, suitable for Welded, Cast Iron and Spiral Pressure Pipes.



DIAMETER SUCTION PIPE.	PRICE EACH.	
	SCREW NIPPLE JOINT.	FLANGE OR SOCKET JOINT.
$\frac{1}{2}$ inch	\$0.60	\$0.65
$\frac{3}{4}$ "	0.70	0.75
1 "	0.85	0.95
$1\frac{1}{4}$ "	1.15	1.25
$1\frac{1}{2}$ "	1.45	1.60
2 "	2.00	2.25
$2\frac{1}{2}$ "	2.85	3.40
3 "	3.45	4.25
$3\frac{1}{2}$ "	4.60	5.15
4 "	5.75	6.65
5 "	6.85	8.00
6 "	8.00	9.75
7 "	....	11.45
8 "	....	14.90
9 "	....	20.60
10 "	....	23.00
11 "	....	26.30
12 "	....	28.60

The area of the perforations in each strainer exceeds the area of the suction pipe, and gives full supply of water to the pump.

In ordering, state whether Flange, Socket or Nipple connection ; if former, give outside measurement of Flange, and if required drilled, send templet. **Larger diameters to order.**



Cast Iron Leader PIPE SHOES.

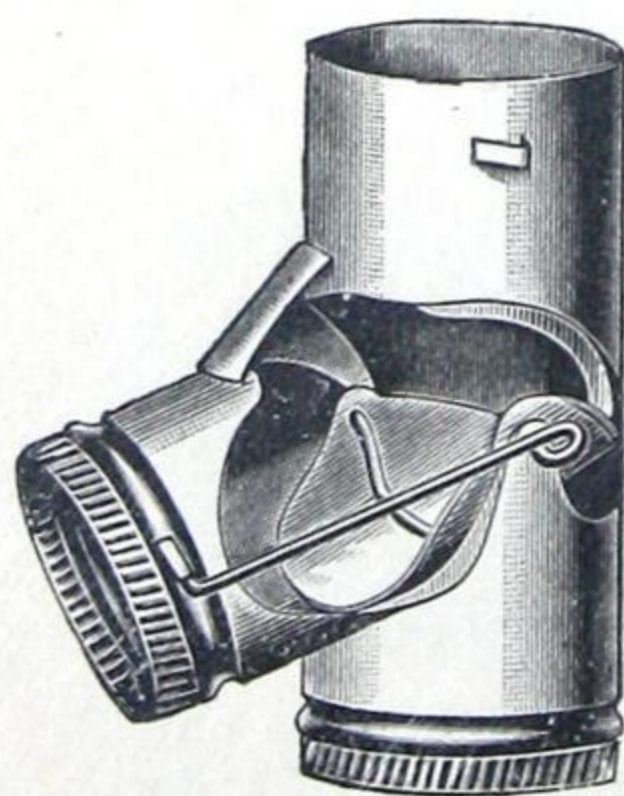
INSIDE DIAMETER.	PRICE EACH.
3 inch.	\$3.50
4 "	4.00
5 "	5.00
6 "	6.00

The Centennial Water Cut-Off For Cisterns.

MANUFACTURED OF HEAVY TIN PLATE AND GALVANIZED SHEET IRON.

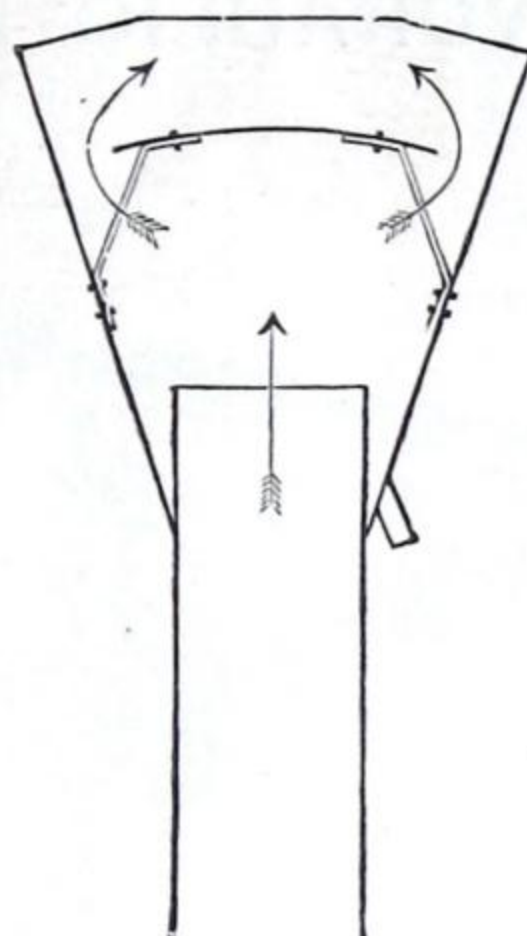
It is the only Cut-off that can be used in any position without extra pipe.

PRICE PER DOZEN.



SIZE.	TIN PLATE.	GALVANIZED SHEET IRON.
2 inches.	\$ 4.00	
3 "	5.00	\$ 8.00
4 "	8.00	12.00
5 "	13.00	16.00
6 "	18.00	20.00

Improved Exhaust Heads.



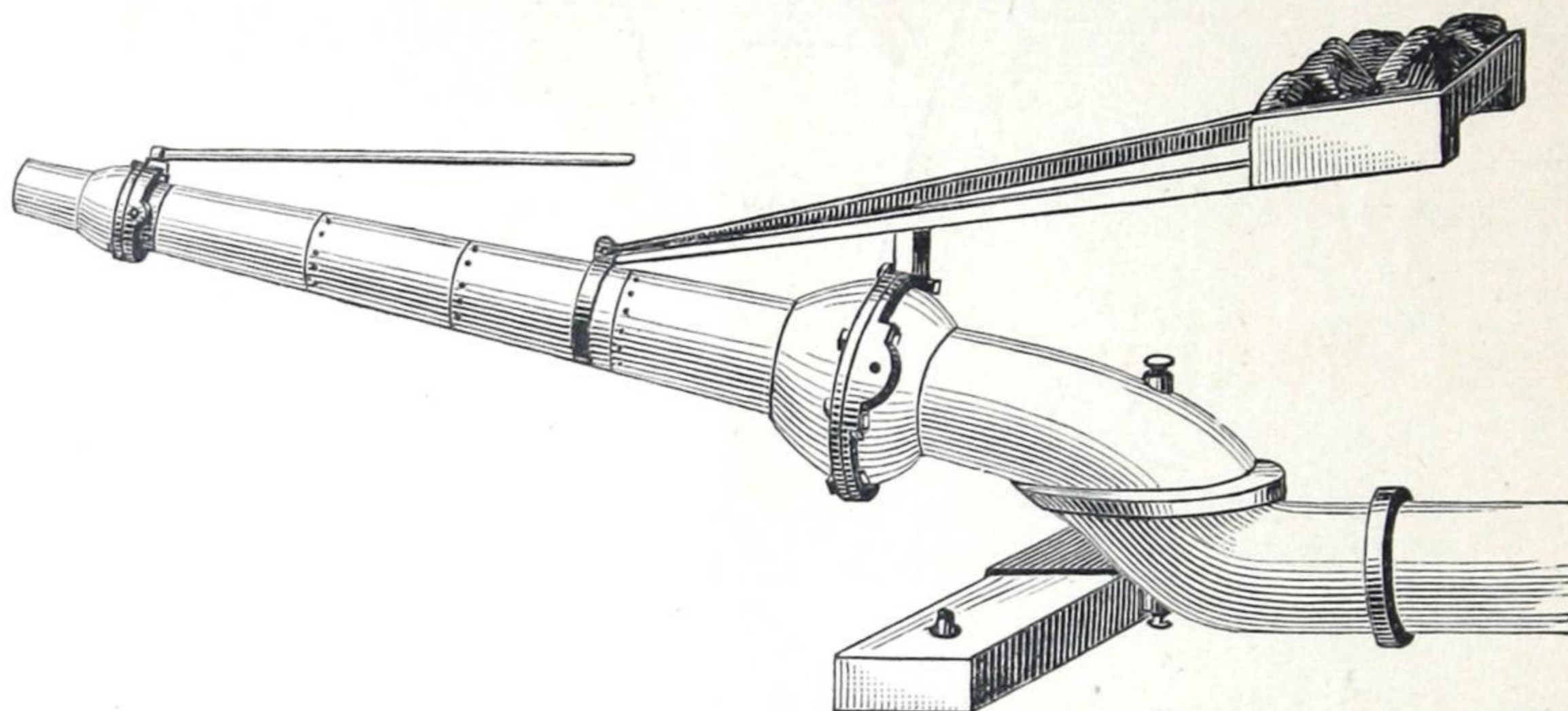
This cut presents a sectional view, showing the construction of a very valuable device to apply to the upper end of all exhaust pipes leading from Engines or Pumps. By the use of these Heads, damage to roofs and annoyance to passers-by is prevented, and the product of condensation can be returned to the hot well in boiler room.

SPECIAL SIZES MADE TO ORDER.

DIAMETERS OF EXHAUST PIPE.	PRICE.
2 inches.	\$ 7.00
2½ "	7.50
3 "	8.00
3½ "	9.00
4 "	11.00
5 "	13.00
6 "	16.00
8 "	20.00
10 "	24.00

Hoskin's Little Giant

FOR HYDRAULIC MINING.



Attention of miners is called to the above "LITTLE GIANT," undoubtedly the best machine for hydraulic mining purposes ever offered to the public.

The centre-bolt which was formerly used has been dispensed with. There is a clear waterway through and the capacity as to the number of the size has been increased. The horizontal and vertical motions are made with only one joint and that a very durable one and easily kept in order. The weight has been reduced about 20 per cent., thus lessening the cost of transportation, but no strength of the machine has been sacrificed to that end. This style of machine is the easiest to work of any yet made.

PRICES OF GIANTS.

Including 2 Nozzles for Each Machine.

NUMBER.	INLET.	NOZZLE BUTT.	PRICE.
1	7 inches.	4 inches.	\$ 90.00
2	9 "	5 "	125.00
3	11 "	6 "	170.00
4	13 "	7 "	225.00
5	15 "	8 "	280.00

LARGER SIZES MADE TO ORDER.

PRICES OF DEFLECTORS.

They are applied as shown in the cut.

DIAMETER.	PRICE.	DIAMETER.	PRICE.
4 inches	\$52.00	8 inches	\$84.00
5 "	65.00	9 "	90.00
6 "	70.00	10 "	97.00
7 "	77.00		

ROOT'S

PATENT

Automatic

Feed-Water

Regulator,

FOR SUPPLYING A REGULAR
AND STEADY FEED OF
WATER TO STEAM
BOILERS.

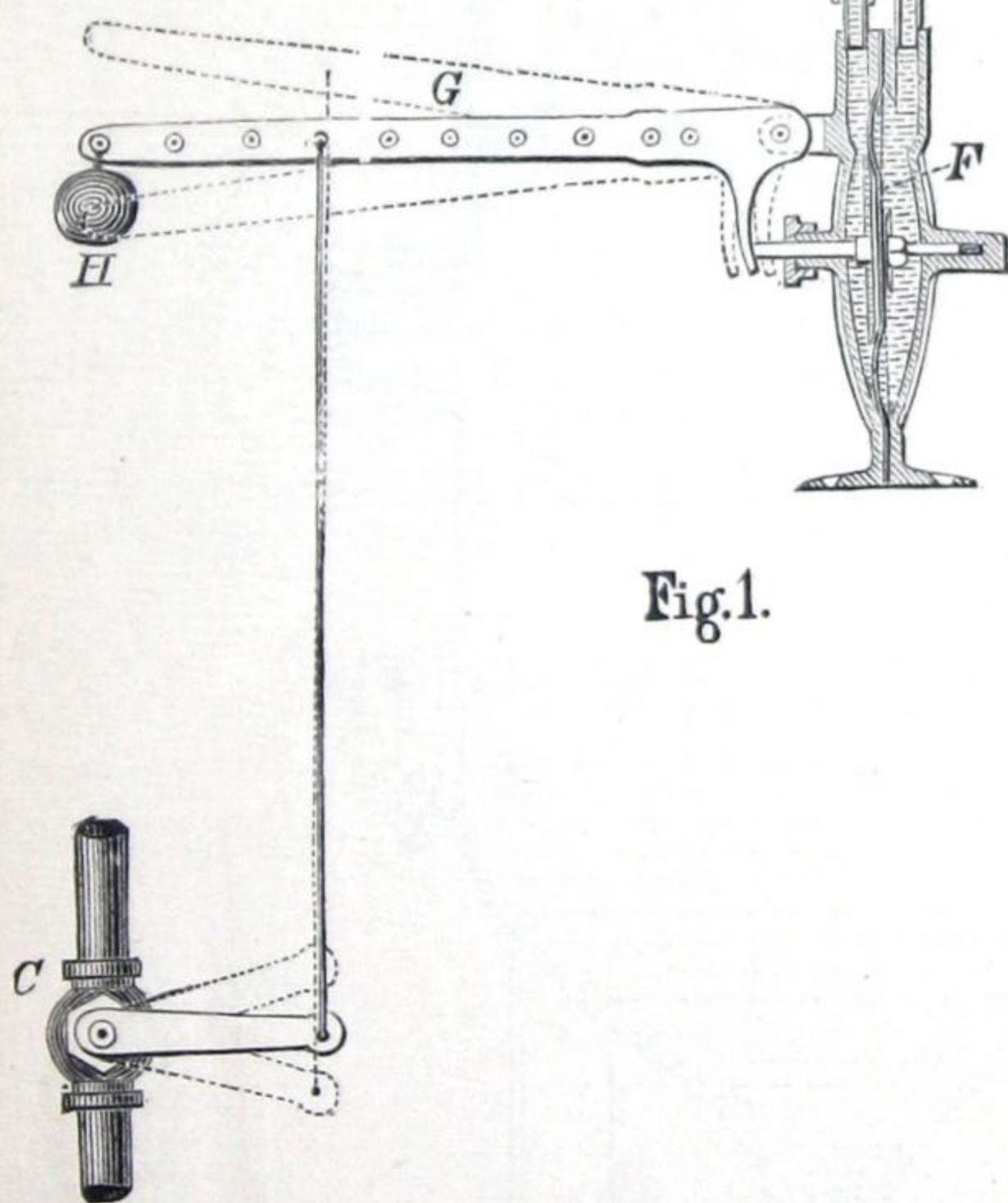


Fig. 1.

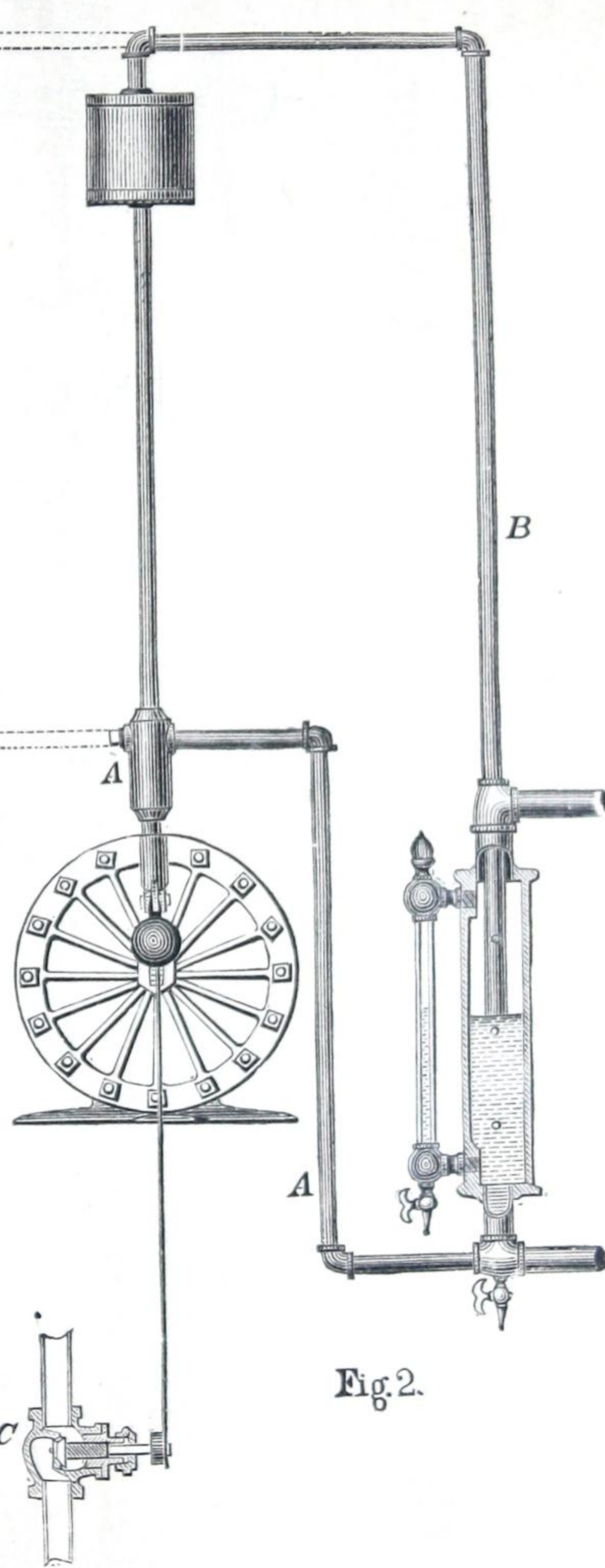
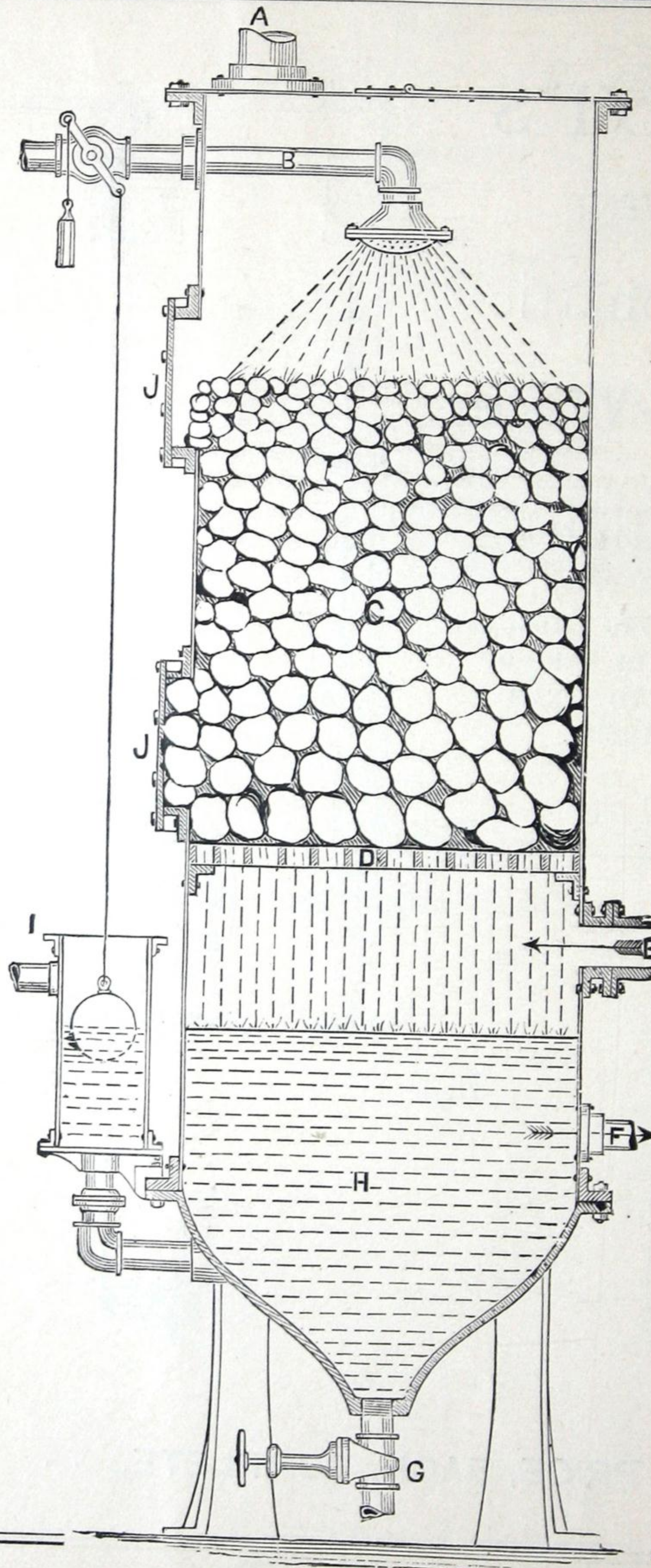


Fig. 2.

PRICE, EACH, COMPLETE, - - -

The Llewellyn Feed Water Purifier and Heater.

FOR DESCRIPTION, SEE NEXT PAGE.



THE LLEWELLYN FEED WATER PURIFIER AND HEATER

has proved itself to be the best and most effective article of the kind in the market.

Its operation is perfect and simple; and insures the highest possible economy in consumption of fuel and water, delivering the latter to the boiler at a temperature of 210° to 212° .

It certainly and absolutely prevents the formation of any scale WHATEVER in NEW boilers, and if applied to OLD will speedily remove whatever incrustation may have been already formed.

DESCRIPTION.

B.—Feed water pipe with spray attachment.

C.—Ordinary Stones of irregular shape so as to allow free passage for exhaust steam.

D.—Grating supporting Stones.

E.—Exhaust Steam from Engine.

F.—Pump to Boiler.

G.—Valve to discharge sediment.

H.—Hot water reservoir (thermometer shows 211° to 212° constantly).

I.—Overflow and float regulating supply of feed water.

J. J.—Doors to facilitate the removal of Stones for cleaning. Care should be taken not to allow the Lime, &c., to accumulate upon these stones in sufficient quantities to choke the exhaust—the character of the water in use will determine the frequency with which the Stones need cleaning.

A.—Escape pipe for discharge of all exhaust steam remaining uncondensed.

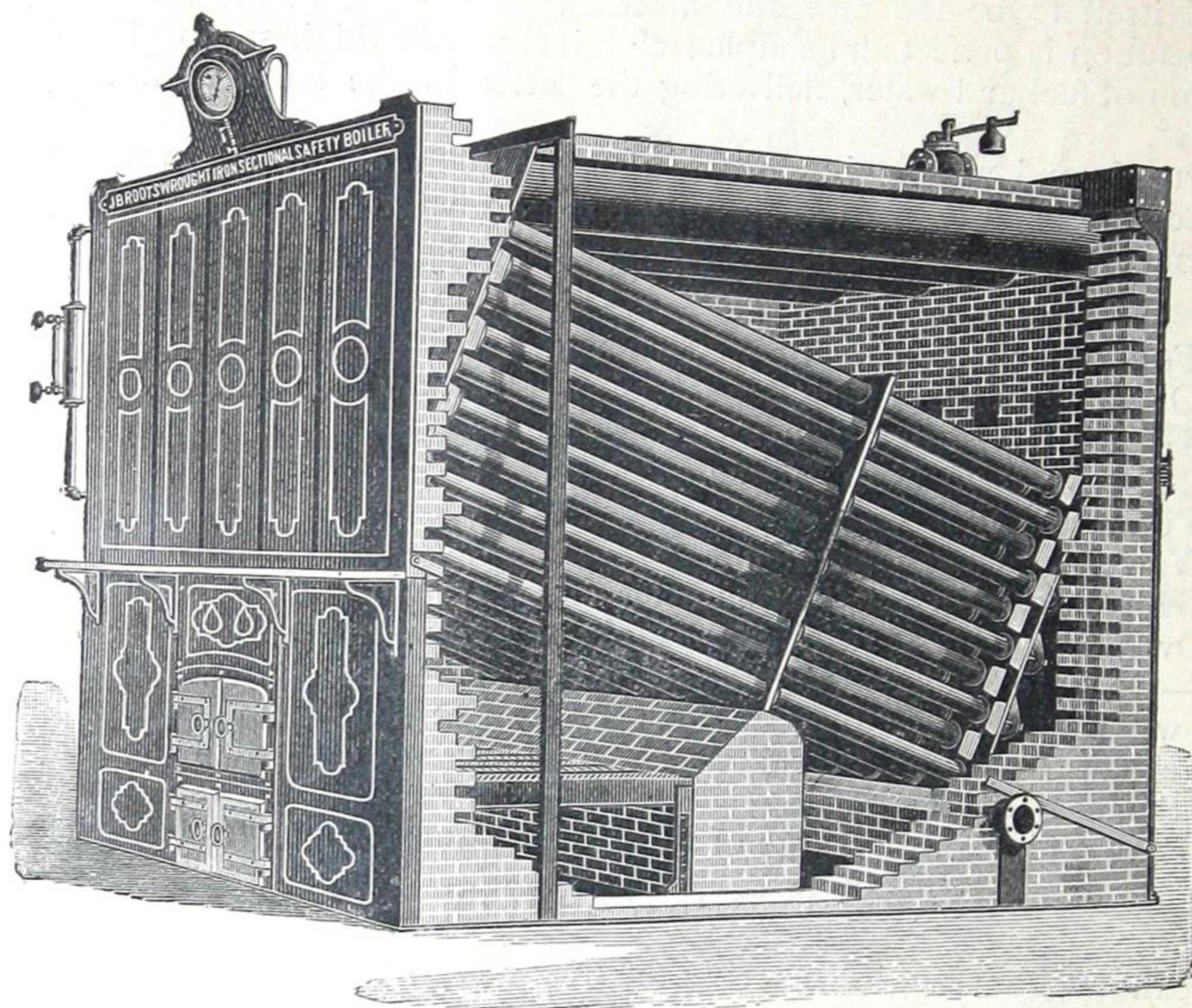
OPERATION.

The exhaust from Engine entering the heater at E passes up through the Stones, heating them to a high temperature, and meeting the feed water from the spray B is largely condensed; the fresh feed water is boiled in percolating through the mass of stone and leaves deposited upon them all matters held in suspension, together with any lubricating agent that may have been carried over in the shape of vapor, dropping into the reservoir H at a temperature very nearly up to the boiling point.

REGULAR SIZES.

DIAMETER.	HEIGHT.	H. P. OF ENGINE.	PRICE.
18 inch.	7 ft. 8 inch.	20	\$150.00
27 "	9 " 9 "	35	200.00
27 "	12 " 6 "	55	250.00
36 "	11 " 7 "	75	325.00
42 "	12 " 0 "	100	400.00
48 "	13 " 7 "	135	475.00
54 "	12 " 0 "	175	550.00
60 "	13 " 0 "	225	625.00

The New Root Sectional Boiler.



The superiority of sectional to shell boilers has become so generally acknowledged that no attempt will be made to reproduce here the stereotyped phrases which demonstrate their points of excellence. We do, however, invite the *special consideration* of all progressive engineers and steam users to what we know to be the *best* form of sectional steam generator. The NEW ROOT BOILER is the embodiment of all that pertains to a scientific and practical adaptation of means to an end. The construction of this boiler represents the experience of fifteen years, and is, we believe, free from any of the defects which have condemned or limited the use of sectional boilers. The New Root Boiler is unequalled as a *rapid, safe and economical* generator of steam of a *superior quality*; can be *readily, cheaply and thoroughly cleaned inside and out*, and can be *transported and erected* in places utterly inaccessible to shell boilers.

We have discontinued the use of rubber gaskets, and all joints are made of metal, the heads being bored to a templet and other parts milled to a gauge. The 4-inch tubes are *expanded* into heavy cast iron heads which are connected by means of extra heavy cast iron bends so arranged that by loosening four bolts the interior of two tubes is exposed. No joints are subject to any direct action of the fire. The combustion chamber is large and so arranged that all available gases are absorbed by the heating surface contained in the tubes. Owing to the application of heat to steam already made and delivered into the 14-inch tubes at top of boiler steam of several degrees superheat can be drawn therefrom. The entire boiler can be taken apart, thoroughly cleaned inside and out, and replaced in its original position within a few hours without disturbing the enclosing brick work. The boiler is furnished *complete* with all appointments of Valves, Gauges and Fire Tools. Everything used in and about the New Root Boiler is the best of its kind and the machinery employed is that best adapted to the purpose. Hence the completed boiler is offered at prices which are the lowest compatible with good workmanship.

Correspondence solicited from parties proposing to build new works or to change or enlarge old steam plants.

Estimates, drawings and specifications furnished free of charge.

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No. WIRE GAUGE THICKNESS.	NOMINAL WEIGHT PER SQUARE FOOT.	PRICE PER POUND.
29	12.0 ounces.	18 cents.
28	13.0 "	16 "
27	14.0 "	15 "
26	15.0 "	14 "
25	16.0 "	14 "
24	18.0 "	13 "
23	20.0 "	13 "
22	22.0 "	13 "
21	24.0 "	13 "
20	27.0 "	12 "
19	30.0 "	12 "
18	35.0 "	12 "
17	42.5 "	12 "
16	45.0 "	12 "
15	49.2 "	12 "
14	55.2 "	12 "
13	63.4 "	11 "
12	71.8 "	10 "

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27	10.8 "
26	12.0 "
25	13.0 "
24	14.6 "
23	16.3 "
22	18.2 "
21	20.5 "
20	22.7 "
19	27.1 "
18	31.7 "
17	37.5 "
16	42.4 "
15	46.7 "
14	53.5 "
13	61.8 "
12	70.4 "
11	74.0 "
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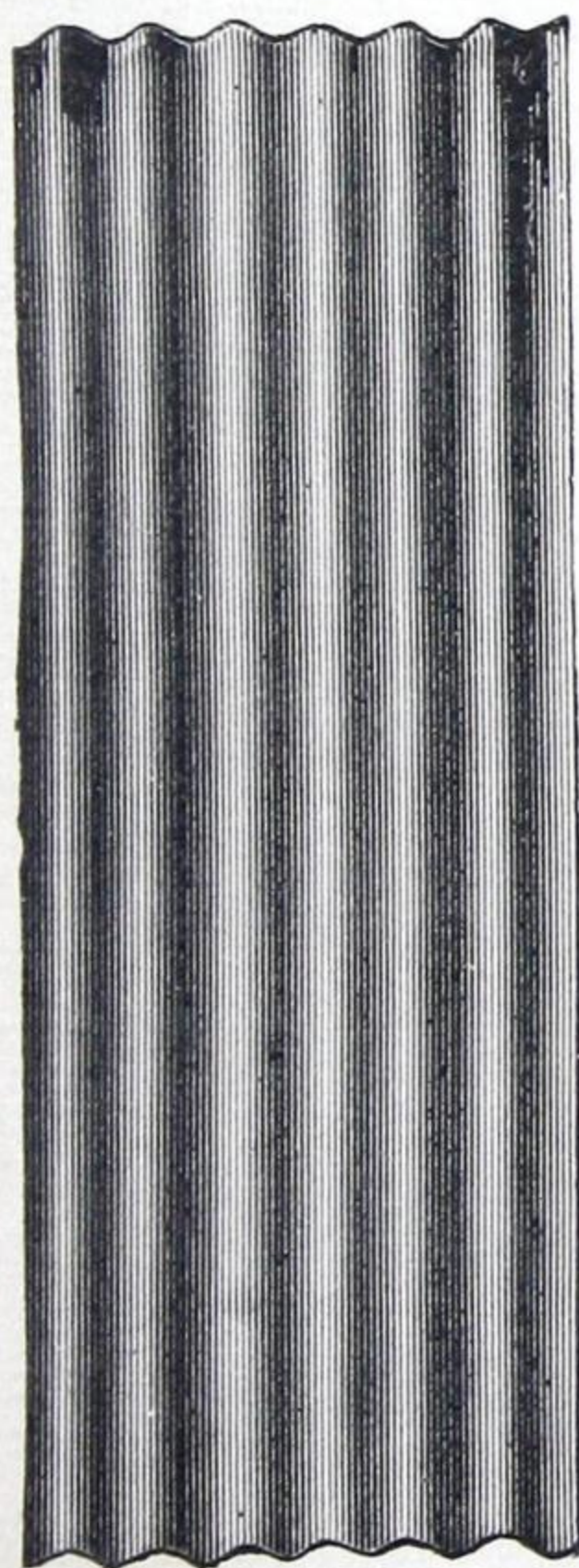
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No. Wire Gauge . .	BLACK		
		Price per Pound—Cents .	
		Nominal weight per sq. foot—Oz.	
16	9½	53	16
17	9¼	47	17
18	9½	39	18
19	9½	32	19
20	9½	29	20
21	9¾	25	21
22	9¾	23	22
23	10	21	23
24	10	19	24
25	10½	17	25
26	10½	16	26

No. Wire Gauge .	GALVANIZED		
		Price per Pound—Cents .	
		Nominal weight per sq. foot—Oz.	
16	12½	54	16
17	12¾	48	17
18	12¾	40	18
19	13	34	19
20	13	31	20
21	14	27	21
22	14	25	22
23	14	23	23
24	14	21	24
25	15	19	25
26	15	18	26

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